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KHIRBAT MAFJAR. STONE SCULPTURE, I

THE carved stonework described in this report was recovered piecemeal during seven seasons of work at Kh. Mafjar in which the palace itself, an adjacent mosque, part of an extensive forecourt, and the remains of a pool with kiosk were cleared.

The material is in two respects incomplete. A second building comparable in character, and presumably contemporary with the main palace, still awaits excavation. There, too, sculpture exists, and a number of fragments probably originating from it have recently been recovered from a modern building in Jericho where they had been re-used. No material from that source has been included here.

Secondly it is clear from innumerable fragments which are still being reassembled that the carved ornament displaying the greatest variety and technical perfection at Kh. Mafjar was not in stone but in stucco. This has had to be set aside for a future report to be written when more fragments have been pieced together.

It is clear that by itself the carved stone work gives only a partial picture of the resources in sculpture available to the builders of Kh. Mafjar. Our object at the present stage can therefore be no more than to add one further instalment to the growing body of published and firmly dated Umayyad works.¹

The sculptures are described under six different heads:

1. Capitals of columns and pilasters, with their bases, and certain acanthus friezes from different parts of the buildings.
2. Wall-surface ornaments, internal and external, including ornamental niches, and door or window frames.
3. A tracery window.
4. A cornice and arcaded parapet from the kiosk over the pool.
5. Fragments of marble screens.
6. Figured reliefs.

At the end of the first section is a list of column and pilaster capitals, including a number which are not illustrated in the plates or drawings.

1. CAPITALS AND BASES

The bulk of the capitals, numbering altogether over sixty, fall into three groups, which are distinguished by differences in pattern and correspond to different positions in the site. The largest group consists of column and pilaster capitals found in and near the arcaded central court of the palace, and of surviving column capitals from the upper order in the two-storied external galleries which flanked the main gate of the palace.

The second group comes from the mosque and from the pool and its vicinity.

The third from the lower order of supports in the galleries flanking the gate.

¹ The authentication of the ruins as a palace of Umayyad construction, with its annexes, is clear enough from analogies in plan, structure, and ornament with other known buildings of the period and from graffiti and inscriptions on the site. In particular the discovery of marble fragments inscribed in Cufic script with the name of Hisham 'Abd ul Malik, in a context which leaves no doubt that they are contemporary with the construction, enables us to place this within the limits of that Caliph's reign (A.D. 724-43). *QDAP*, Vol. VIII, pp. 51-3.

Besides these well-defined groups there are some half-dozen capitals or pairs of capitals from different parts of the site which must be separately classified.

The interest of all these capitals largely depends on whether they are really a single series, in the sense of having been carved originally for the buildings in which they were found, or whether they are merely a collection of second-hand pieces brought together with the usual economy of the period from the ruins of earlier constructions. The answer to that question, based on a study of each separate group, seems to be that a new set of capitals was in fact cut for each constituent part of the building. We have in consequence at Kh. Mafjar an authentic series of Umayyad capitals which can be dated to the second quarter of the eighth century A.D.

Group A. Capitals from the Central Court and Upper Gallery of the Façade
(Plates XIII and XIV)

The central court was surrounded on the four sides by arcaded galleries in two stories. In each arcade there were four columns and two rectangular responds, the latter attached to the arms of L-shaped corner piers. Both columns and responds carried capitals of Corinthian type; the original number of these was therefore forty-eight, half belonging to the lower and half to the upper story. In addition, the north and south walks of the cloister were spanned at each end by arches, and the pilasters carrying these seem also to have been decorated with acanthus capitals of similar type.¹

Of the thirty-two column capitals needed for both orders nineteen have been recovered in or near the courtyard, some whole, others more or less damaged. Small fragments account for a few more. All but one of these are classified in this group.

Of the sixteen pilaster capitals, excluding those of the arches spanning the north and south walks, about nine have been found as well as small fragments.

The answer to the question whether these capitals are in their original context or not is supplied by their form on the one hand and their material on the other. The whole series is carved from a single kind of stone, a loose limestone conglomerate probably quarried from a place called Kh. es Samra two miles to the north-east of Kh. Mafjar. It is identical with the stone used throughout the structure of the palace.² As regards form the whole series is remarkably consistent both in the internal arrangement of the ornament and in the character of the detail which composes it. It is *prima facie* improbable that so large and well matched a set of column and pilaster capitals could have been brought together at second hand from different sources.

There is no appreciable difference in pattern between the capitals of the two orders in the central court, and except for some of those belonging to the lower arcades which had fallen near their own columns it would be difficult, apart from its scale, to say which order a given capital belonged to. It happens in fact that of twenty-seven measurable column and pilaster capitals nine are between 35 and 44 cm. high and eighteen between 47 and 61½ cm. The average height of the first group is 406 mm., and all but three

¹ See note 2 on p. 53 below.

² The only variation being in the pavements and the monolithic columns.

come within 3 cm. of it; the average of the second group is 518 mm., and all but four are within 4 cm. of it. We conclude that the first group as a whole belongs to the upper and the second to the lower order.¹ It follows that just twice as many capitals of the lower order have survived as of the upper.

The other capitals classified in this group come from the ruins of the arcaded porticoes on either side of the main gateway of the palace. The upper arcades of these porticoes

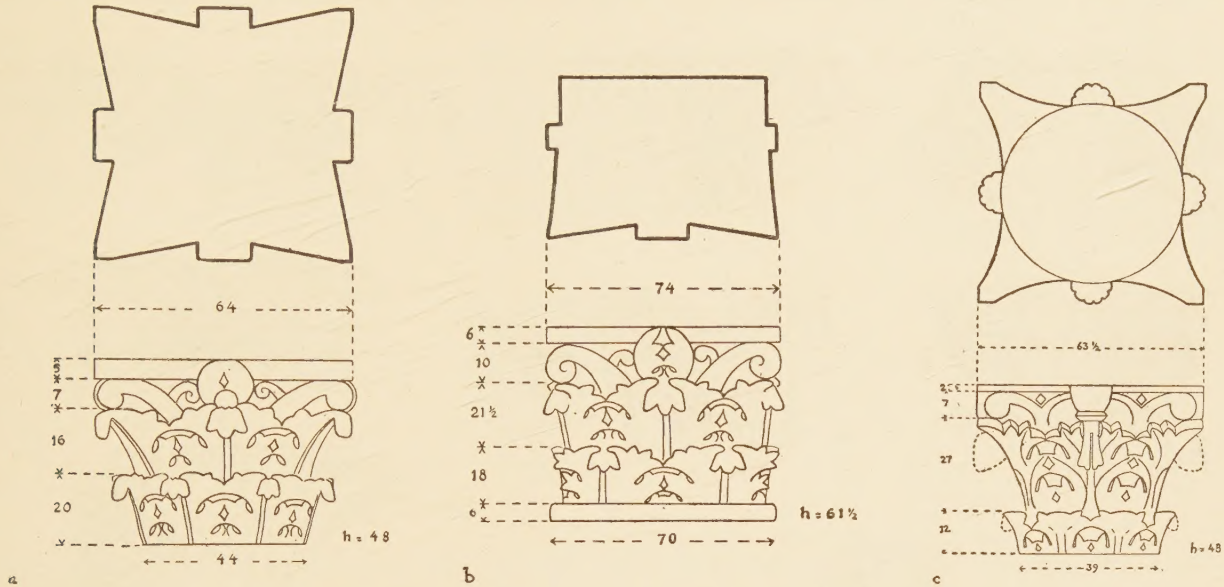


FIG. 1. Column and Pilaster Capitals. *a* and *b*, Group A. *c*, No. 14

were carried by nine monolithic columns. Six of their capitals were found in a fair state of preservation in the forecourt, where they had fallen with the collapse of the façade. Half of a seventh similar capital was found in one of the rooms on the east side of the palace. The leaves and outer surfaces of this capital were overlaid with gold foil on red paint, while the recesses were painted blue. It was presumably being worked on in the room where it was found at the time of the collapse: its destination in the palace is not known, but in appearance and size it closely resembles the capitals of the upper gallery.

The features which impress upon the whole series the characteristics of a style relate firstly to composition, secondly to decorative effect.

The normal composition is in four horizontal registers (Fig. 1, *a* and *b*), consisting of two rings of eight acanthus leaves surmounted by volutes which support an abacus. The bell-shaped calathus of the classical Corinthian form is not indicated except in two capitals from the façade portico. In the respond capitals the lower row of leaves rests on a half-round moulded collar (Fig. 1, *b*).

The two tiers of foliage in some cases fill as much as three-quarters of the total height of the smaller and four-fifths of the larger capitals. This leaves little room for the volutes,

¹ The average height of the measurable columns of the lower order is 3.10 m. and of the upper order 2.30 m. approximately.

and none at all for the classical volute sheaths and stems, which are not represented. The volutes spring directly from the upper tier of acanthus leaves.

The division into zones is emphasized by the forward projection of the top part of the leaves in each band of foliage and by the close contact of adjacent leaves, which prevents interpenetration. Sometimes a ring of stone is left unworked below the base of the upper leaves.

Only one capital in the whole group departs from the normal composition in four



FIG. 2. Types of acanthus leaf, Group A

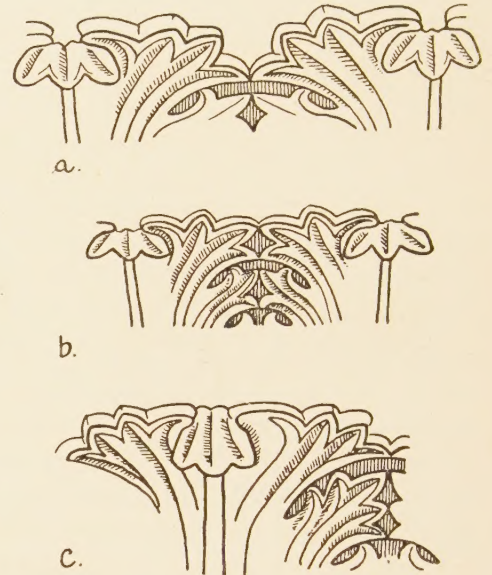


FIG. 3. Types of broad acanthus leaves, Group A

registers. It is the pilaster capital number 28 (Plate XIV) in which the volutes are suppressed and a few centimetres added in compensation to the height of the abacus. This particular capital is exceptional in certain other details as well.¹

The characteristic acanthus leaf in this group (Fig. 2) consists of five lobes,² two on each side of a central rib which develops at the top into the fifth or middle lobe. Each lobe normally has three tips,³ the uppermost of which curves back in a characteristic way to enclose an oval 'eyelet' above it. In most capitals there is room at the bottom of each leaf for the beginnings of a third pair of lobes, more or less developed according to the space available. The top or middle lobe⁴ of each leaf droops well forward and the inner tips of the uppermost lobes on each side are enlarged to lap round above it. The middle

¹ See Index of Capitals, pp. 64-5.

² The word 'lobe' is used to denote those parts of the leaf which are defined by its major indentations; each 'lobe' terminates in three or more 'tips', defined by the minor indentations in the outline.

³ But to give extra height or width, especially in the lower register of pilaster capitals, a fourth tip is sometimes added (Fig. 3 and Fig. 2, *d*). Five tips occur only once on true capitals (Pl. XIV, No. 23).

⁴ Fig. 2, *e* is a variation in its form which occurs in this group only in one capital from the east porticoes and in the gilded capital mentioned above. (Pl. XIII, Nos. 51 and 49.)

rib consists of a square-edged ridge reserved in a strip of stone dressed to a smooth and slightly receding plane on either side; it tapers gently upwards. The width of the plain strip varies according to the desired width of the leaf. The leaves are modelled with shallow V-shaped grooves to indicate the veins. These curve down parallel to the middle rib. The contours of the leaves are generally rounded and soft. Deep cutting is confined to the spaces between the tips of touching leaves. The shape of these spaces is very con-

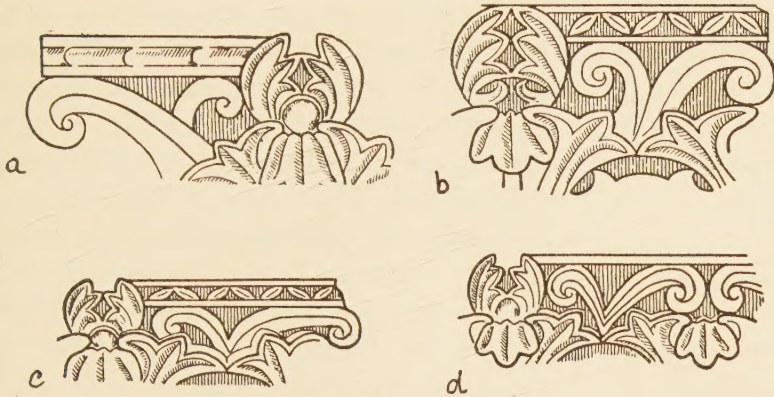


FIG. 4. Types of volutes, Group A

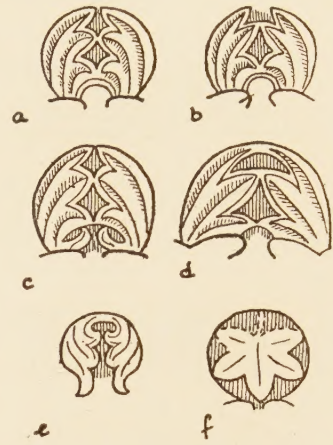


FIG. 5. Types of ornament between volutes, Group A

sistent, and their repetition, alternating with the softly modelled leaves, produces a pleasing pattern which constitutes the principal characteristic of the design.

The volutes are thick and heavy and look cramped between the foliage and the abacus (Fig. 4, *a*, *b*, *c*). They are arranged in pairs, two on each face, separated by a motive of half palmettes placed tip to tip, which is produced upwards to divide the abacus in the middle (Fig. 5).¹ In Fig. 4, *a* the inner and smaller volute is a mere excrescence applied without organic connexion to the back of the outer. In *b* the two spirals spring from a common stem. Sometimes both forms appear together (Plate XIV, No. 21). The front surface of the volutes is cut to two oblique planes connected by a rebate.

On two capitals, both from the east porticoes, the inner volutes in each pair are suppressed (Pl. XIII, Nos. 48 and 51); the space made available is used to suggest the curved upper rim of the calathus. Both features are exceptional at Kh. Mafjar.

The plan of the abacus is shown in Fig. 1, *a* and *b*. The sides recede gently from near the corners towards the centre, where the upper part of the ornament between the volutes forms a shallow projection. The sides are from 5 to 6 cm. high and decorated either with a zigzag ornament of lozenges (? olive leaves) or with plain horizontal grooves (Fig. 6, *a*, *b*, and *c*). Both motives are used to decorate fillets in other parts of the buildings. Less frequent in this position are the ornaments shown in Fig. 6, *e*, *f*, and *g*.

There is nothing in these capitals which shows great originality and the question of

¹ *e* and *f* each occur once only, on Nos. 51 and 7 respectively (Pl. XIII). A six-lobed rosette also occurs on the short sides of No. 28.

origin presents no difficulty. In point of composition one would pick out as the most characteristic features the marked horizontal zoning, the suppression of the volute sheaths

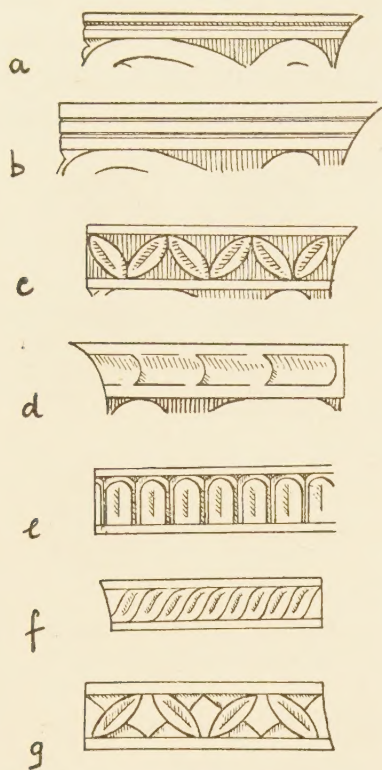


FIG. 6. Types of abacus ornament,
Group A

and cramping of the volutes, and the accent placed on the abacus by its ornamental treatment. The decorative effect is mainly produced by the rounded modelling of the leaves, the curving symmetry of their veins, and the studied arrangement of their points of contact. This very characteristically patterned foliage is copied from a type of capital first cut in Palestine for Christian buildings of the fifth century, and probably imitated from the curiously stylized fleshy type of acanthus which appears in the pilaster capitals of the Golden Gate at Constantinople.¹ Many examples of the same pattern, sometimes done in a flat surface technique, are to be seen in Jerusalem and other parts of the country. On Plate XIII, A we reproduce a photograph of one such capital which may now be seen in the courtyard of St. Anne's at Jerusalem, and is presumed to have been cut for the fifth-century church of the Probatikē or Sheep Pool.² Although it differs in other important features from the Mafjar capitals, the pattern of hoops and diamonds in the voids between the leaves, the oval 'eyelets' formed by the recurved leaf-tips, and the generally soft and fleshy contours of the foliage are unmistakable forerunners of our acanthus.

In composition there is nothing abnormal about our capitals except that the accent laid on the abacus by decorating the sides is unusual in Palestinian capitals of the Christian period, where the abacus is generally left plain or at most divided into two fillets by a groove or hollow moulding. On the other hand, similar decorative treatment of the abacus may be seen in the nave capitals of the Aqsa Mosque and in the Golden Gate in the Haram esh Sharif. The actual ornaments used are of course conventional, but not in this position.³

The omission of the volute-sheaths and stems had become frequent in the fifth century and was probably normal in the sixth. At Mafjar, with certain exceptions to be described, the sheaths and stems are never represented. The volutes are rather more robust than on many fifth-century capitals. It may be noted that there is no bud in the fork between them.

¹ Weigand, *Athenische Mitteilungen*, XXXIX (1914), Pl. I, 1 and 3.

² There are comparatively few certainly dated capitals in Palestine. Another of the fifth century, with a rather similar stylization, is at St. Stephen's in Jerusalem: Vincent and Abel, *Jérusalem nouvelle*, Pl. LXXIX, 1 and 2. A number in the flat technique displaying the same patterned foliage are in the possession of the Palestine Archaeological Museum.

³ The zigzag of lozenges commonly appears in Coptic sculpture of the sixth century. See Duthuit, *La sculpture copte*, Pl. LXI, c, LVIII, c, &c. But cf. also the stucco ornament in a Sasanian house at Ctesiphon, Schmidt, *Syria*, Vol. XV (1934), Pl. II, H. It is used in the same position on two of the Aqsa nave capitals.

One detail here is new in Palestinian capitals. It is the pair of half-palmettes which appears between the volutes. While this is a recurrent and characteristic ornament in all parts of Kh. Mafjar it does not, as far as I know, appear on any pre-Islamic capital.¹

Another feature that should be noted in our capitals is the plan of the abacus. The slight recession of the sides, the feeble, flat projection of the central ornament, and the straight lines of the outline combine to distinguish the plan from the vigorous segmental outline and boldly projecting central boss of the normal fifth-century capital.

One group of stones with acanthus foliage found in the central court shows a variation on the type just described. They are a series of seven stones and fragments that occupied some position on the L-shaped piers at the junctions of the colonnades.² Three of them are shown on Plate XIV, Nos. 30, 31, and 33.

In the composition of these fragments a still greater proportion of space is allotted to the foliage, less than one-sixth of the total height being left for the volutes and abacus. The abacus is consequently reduced to a thin slab without ornament. The foliage shows the work of at least two hands. In Nos. 30 and 31 the form of the acanthus and the quality of the carving is hardly distinguishable from that of the column and respond capitals. But in other stones, as No. 33, the modelling of the leaves is much less careful. The veining, which is harshly and rather unevenly incised, converges upon the middle rib instead of curving down parallel to it. The formation of the leaves is often distorted by an exaggerated lengthening of some of the tips. Curves are straightened out and the usual rounded outline of the voids between leaves is replaced by an angular pattern of sharp-cornered triangles.

The volutes are narrow and thin-waisted as in Fig. 4, *d*.

Although they differ in style and workmanship from the rest of Group A, these fragments still have a family relationship with them; they also have features in common with the next group to be described, the capitals of the mosque, and so constitute a link between the two.

Base Mouldings

Fig. 7 gives the profiles of mouldings at the base of five out of the eight original respond pilasters on the angle piers of the central court. By the nature of the case these mouldings are the original work of Umayyad masons. There is more uncertainty about the column bases. The majority of these are cut in a hard pink or creamy limestone, which is not used in any part of the building or its annexes known to be of Umayyad construction.

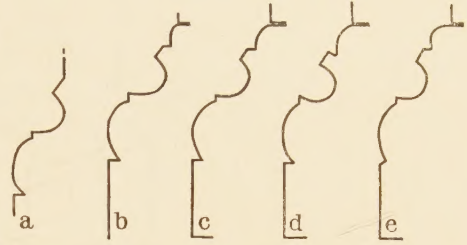


FIG. 7. Central Court. Respond pilaster bases. Scale 1 : 10

¹ It may be seen, however, on the nave capitals of the Aqsa Mosque, the history of which is still uncertain, and on a re-used basket capital in the Parvis of the Church of the Holy Sepulchre.

² The height of these stones varying from 400 to 455 mm. suggests that they belonged to the upper gallery of the cloister, and they may have crowned pilasters carrying the arches which spanned the ends of the north and south walks.

On the other hand, it matches certain monolithic columns which are known to be importations from earlier buildings¹ and others like them which may well be. There is therefore a *prima facie* probability that all these bases in hard limestone are re-used. The

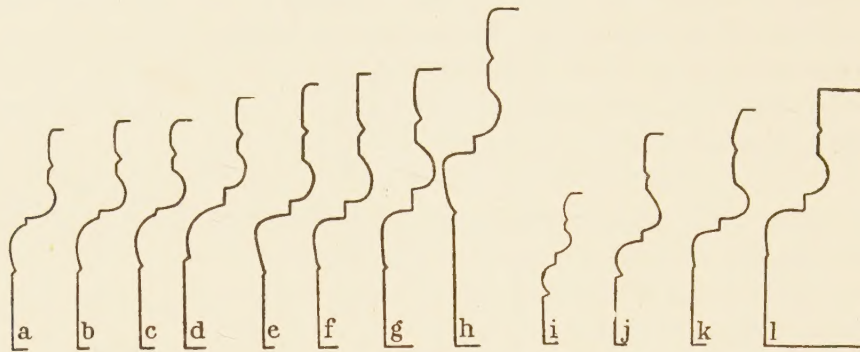


FIG. 8. Hard limestone column bases. Scale 1 : 10

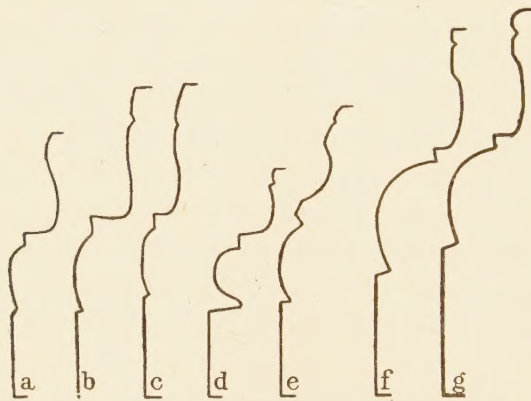


FIG. 9. Soft limestone column bases. *a-e*, Central Court; *f, g*, Mosque. Scale 1 : 10

profiles of those found in and near the central court of the palace are shown in Fig. 8. Nos. *a* to *h* are from bases *in situ* in the ground-floor colonnades. Nos. *i* to *l* were found lying in different places out of position. Apart from considerable variations in height, the profiles conform on the whole to a single type. The principal difference distinguishing them from the profiles of the pilaster bases lies in the vertical pose of the two fillets above the cavetto. The corresponding features in the pilasters lie at a slope. The form and variations in size of these column bases would be consistent with the assumption that they originated in Christian buildings of the fifth or sixth century.

A certain number of column bases in the central court were cut in the same limestone conglomerate as the capitals. They are shown in Fig. 9. Nos. *a* to *c* were *in situ* in the lower colonnades, *d* and *e* were lying loose. I think we are justified in inferring from the resemblance of *a*, *b* and *c* to each other, and their obvious difference from any of the profiles in Fig. 8, that they are of original Umayyad workmanship. They closely

¹ Those with crosses carved upon them. *QDAP*, Vol. V, p. 134.

resemble three limestone bases found *in situ* in the mosque, the profiles of which are shown on the same figure, *f* and *g*. *g* represents an engaged half-column base *in situ* which must certainly be original. *f* is repeated on two column-bases in position in the southern part of the mosque.

Fig. 10 shows the base mouldings of the upper order in the colonnades of the palace façade. The bases are all of granular limestone, and we infer from their resemblance to

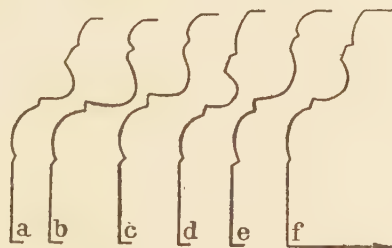


FIG. 10. Front colonnades, upper order. Soft limestone bases. Scale 1 : 10

the profiles of the pilasters in the central court (Fig. 7) that they, too, are Umayyad work. The slight differences in scale are explained by variations in the height of the second-hand columns they supported.

Group B. Capitals from the Mosque,¹ Forecourt, and Pool² (Plate XV)

The second style of Mafjar capitals is represented by six examples. Two of these (Pl. XV, Nos. 57 and 60) were found in room VII' *a'* at the north end of the east range of the palace building. Their original provenance (as well as their Umayyad workmanship) is evident from their form and dimensions: No. 60 belonged to the mosque³ and No. 57 to the pool.⁴ A third capital, No. 55, lay east of the pool and belonged to the end pier of an arcade at the east side of the forecourt, of which everything has disappeared except the foundations, the stones of one arch, and this capital (Fig. 11, *a*).

The remaining three capitals were found in the mosque (Nos. 58 and 59) and beside the pool (No. 56), to which buildings they undoubtedly belonged.

The horizontal divisions in these capitals are still more marked than in the first group

¹ The mosque was a rectangular enclosure with the southern end sheltered by a roof resting on arcades running east and west. These were supported by columns and engaged half-columns attached to pilasters in the east and west walls. (See *QDAP*, Vol. VIII, p. 51.)

² The pool consisted of a square basin with a central fountain sheltered by a massive octagonal kiosk and a dome carried on four central arches. The octagonal part of the roof was supported by eight angle piers.

³ It is composite in shape (Fig. 11, *b, c*) being cut to fit a half-column attached to a rectangular pilaster. This is precisely the form of two respond bases existing *in situ* against the west wall of the mosque, where in fact a second capital of the same form was found. It is altogether unlikely that either capitals or bases were cut for any other building, and the attribution of both to the Umayyad builders, together with a column capital of identical style, also found in the mosque, may be regarded as certain.

⁴ It is identical in style and corresponds in scale with No. 56, part of a massive capital with two faces cut to fit the external angle of a regular octagon, which was found beside the pool close to a pier of the same form. The massive scale and peculiar form of this fragment, added to its resemblance in style to capitals in the mosque, rules out the possibility of re-use.

(Fig. 11). The tops of the lower leaves, for example, are cut back to form something like a flat shelf on which the upper ring is based. This has the effect of dividing the foliage into two independent registers. The isolation of the volutes is still more drastic. Instead of appearing to spring from somewhere behind the upper leaves, they are frankly framed between two plain horizontal borders, which do away with any vestige of organic

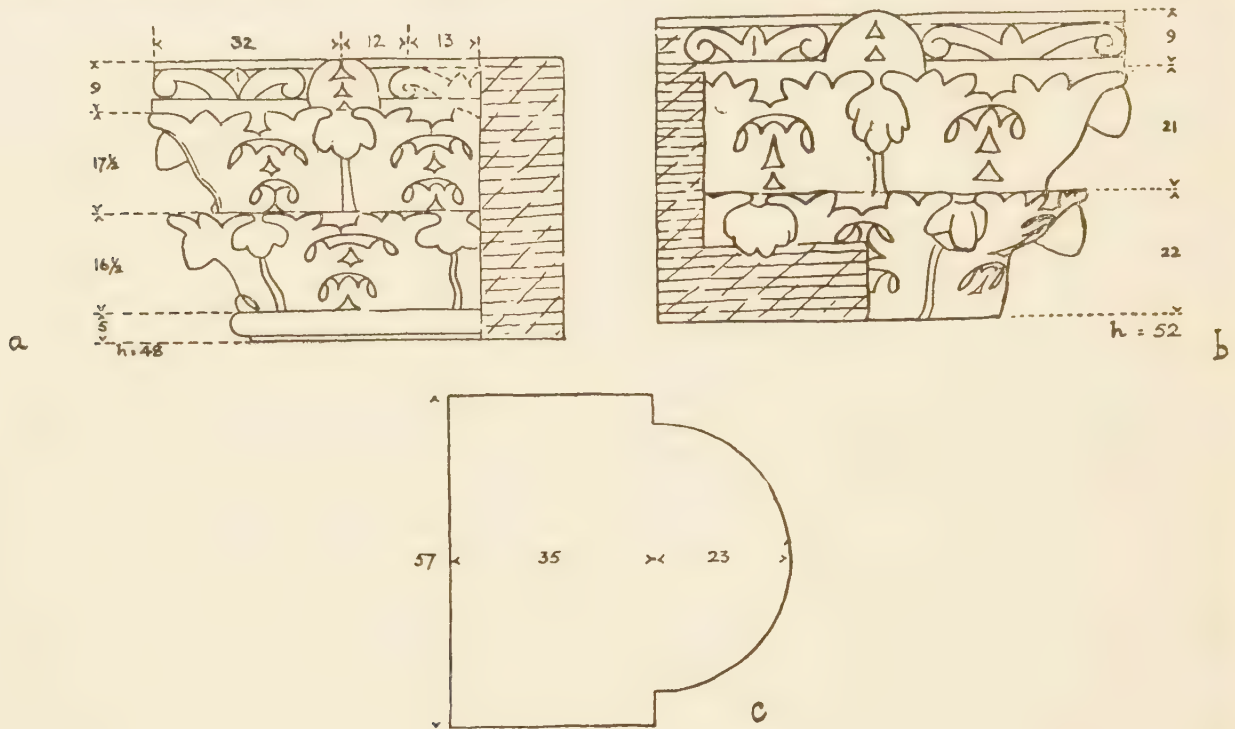


FIG. 11. Pilaster Capitals, Group B



FIG. 12. Types of acanthus, Group B

relation with the foliage. These volutes amount to little more than an ornament on the side of an abacus resting directly on the leaves.¹

The acanthus type lies somewhere between the foliage of Group A and the angular leaves of No. 33. The tips of leaves are pulled out, curtailed, or suppressed regardless of symmetry or natural form (Fig. 12). The veining curves down in the manner of

¹ In the capitals of the pool the upper border is enlarged and treated like the normal abacus of Group A with the ornament of Fig. 6, c.

Group A, but is sometimes rather deeply and unevenly incised as in 33. Lobes have three, or four, or only two tips; sometimes three on one and four on the other side of the same leaf. In some of the capitals of the mosque the drooping middle lobes have a central rib and several tips. In the lower part of the capital there is a tendency for the tips,

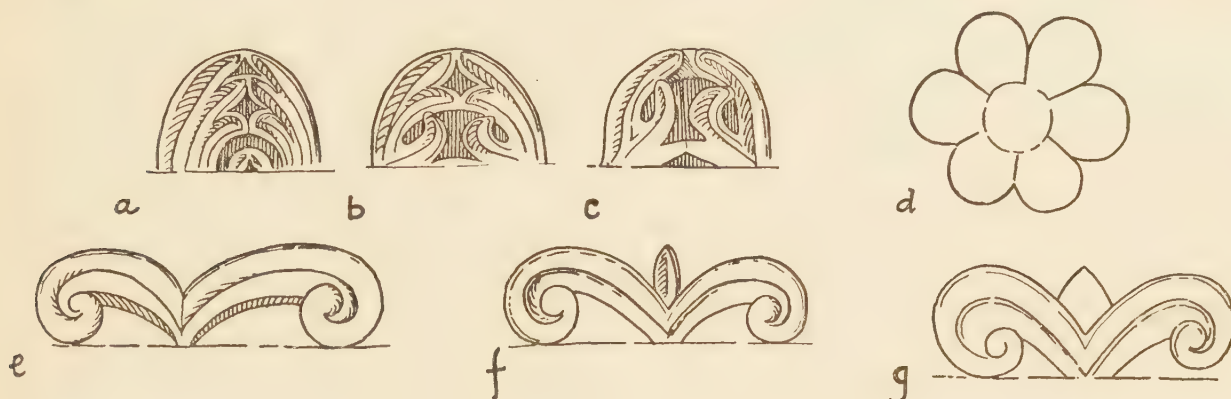


FIG. 13. Volutes and spacer motives, Group B

instead of being grouped in the form of leaflets in the usual way, to separate out and spring independently either from the base or from the central stem of the leaf.

The stems of the leaves in the pool and forecourt capitals are slightly sinuous (Fig. 12, *c*) or wind-swept in form, and a similar effect of movement is produced on some of the capitals in the mosque by a deflexion of the middle lobes (Pl. XV and Fig. 12, *a*).

Fig. 13 shows variations in the form of the volutes and of the half-palmette device which divides them. In the capitals from the octagon of the pool this is replaced by a rosette (*d*).

A comparison of the acanthus in these capitals with that of Group A, especially in such examples as 33, leaves no doubt that the two groups are closely related to each other, though in Group B the composition of the capitals is further removed from orthodox models and greater liberties are taken with the form of the leaves. Numerous variations and irregularities in detail, and such fancies as the wind-blown tips and stems, introduced or omitted at haphazard, show the working of a healthy individualism which could quote without slavishly copying earlier forms.

The bases of the columns and pilasters in the mosque are similar in profile to those bases in the central court which are most likely to be of Umayyad workmanship (Fig. 9).

The piers which in the forecourt and the pool carried the capitals classified in this group had the simplest of base mouldings (Fig. 14). They consist simply of a quarter-round between two fillets, set at an oblique angle. Fig. 14, *d*, which is the profile of a bulky anta pedestal applied to the north face of the northern pier of the façade portico, shows

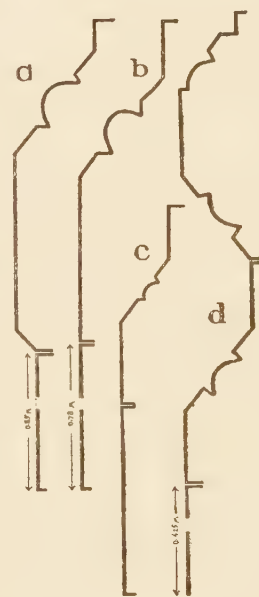


FIG. 14. Pier base mouldings. *a* and *b*, Pool; *c*, from Forecourt portico; *d*, anta pedestal in Forecourt.

the same combination used at different angles at three levels. Nos. *a* and *b* are from the piers of the pool, and *c* from a pedestal *in situ* at the south side of the forecourt.

Group C. Capitals of the Lower Arcades in the Front Porticoes
(Plate XVI, Nos. 39, 41, 42)

The ground-floor arcades flanking the main gate of the palace were supported by piers consisting of four clustered columns on high pedestals; there were six of these piers on

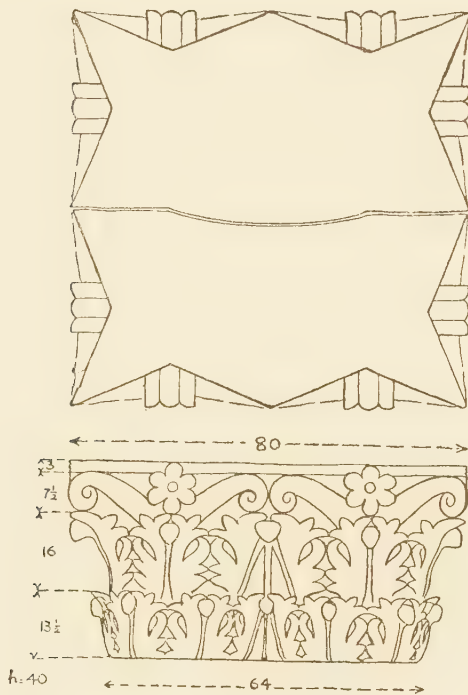


FIG. 15. Quadruple Capital, Group C



FIG. 16. Types of acanthus leaves, Group C

the south and five on the north side of the gate. They carried compound capitals, corresponding to their four component columns. Each capital was composed of two stones (Fig. 15) keyed together by a flat segmental curve in the vertical joint between them. Most of the capitals recovered were badly smashed in their fall.¹ The arrangement of the ornament is like that of Group A. In the foliage² the first distinguishing mark is the club-like knob which terminates the central rib of each leaf.³ A second is the tendency, noticed in Group B, but here more marked, for the lower lobes to

¹ The uniform style and peculiar form of these capitals leave no doubt that they were originally designed for the building in which they were found.

² Fig. 16. Veins, modelled as in Group A, may either converge on the central stem (*b*) or fall to the base of the leaf (*a*). The fan-like leaves of *c* (Pl. XVI, 42) are unusual.

³ The same feature appears in an acanthus frieze in stucco, now in the Palestine Archaeological Museum, which formed an upper border in one of the panels decorating the entrance hall of the palace.

disintegrate into their component tips, so that the acanthus is half-way to becoming a palmette.¹

The volutes in these capitals are always single and separated by a six- or eight-petalled rosette.

The abacus is shallow, and without ornament save for two horizontal grooves.

Apart from their quadruple form, which necessarily followed from the composite character of the supports they crowned, these capitals are much further removed from conventional types than either of the groups previously described. They are less imitative and at the same time less varied. The form of the acanthus bears no particular resemblance to pre-Islamic Palestinian models. There is still stylization, and persistence in a pattern resulting from the contact of adjacent leaves, but it is a new pattern, and not one, like that of Group A, to be seen in earlier Christian capitals.

The pedestal mouldings are shown in Fig. 17. Nos. *a*, *b*, and *c* are from the north portico, *d* and *e* from the south. There are signs that both lots may be unfinished. The profiles and execution are in any case crude and it is quite likely that they were intended to receive a plaster finish.

Unclassified Capitals

The remaining capitals are unclassified in the sense that their affinities with the three main groups are not close enough to justify their inclusion in any of them. As will be seen, there are reasons for attributing all but one of these capitals to the builders of the palace.

No. 52 (Plate XVI), an engaged half-column capital, was found in the forecourt amongst the ruins of the south portico of the façade. Its original position is unknown. Differing from any of the main groups in having three tiers of acanthus leaves, it is cut from the same stone as the rest, and is perhaps close enough to Group C to be regarded as a piece of second-rate work in that style.

The main interest of No. 14 (Plate XIII), which was found in the central court, where it may have been used, is that it is the only certain importation from an earlier building. It is distinguished from the capitals so far described, in plan,² composition,³ and details

¹ With the acanthus of these capitals cf. Plate XVI B-B, showing fragments of a frieze from some level in the front elevation of the gate tower. The stones had fallen at different points in front of the gateway. The acanthus is not uniform. The background is painted red. The disintegration of the leaves is again noticeable.

² Cf. Fig. 1, *c*, showing the abacus as seen from the top. The strongly salient corners, with curved outline, contrast with the restrained lines which characterize the capitals of Group A (Fig. 1, *a*).

³ Note especially the height of the upper wreath of acanthus in relation to the width of the leaves and to the

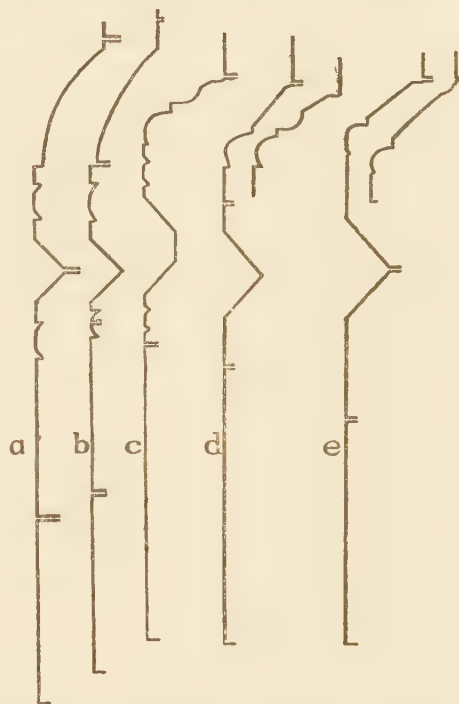


FIG. 17. Pedestal mouldings from Forecourt porticoes. Scale 1 : 12



FIG. 18. Capital No. 14. *a*, Type of acanthus; *b*, Ornament between volutes not visible on Plate XIII

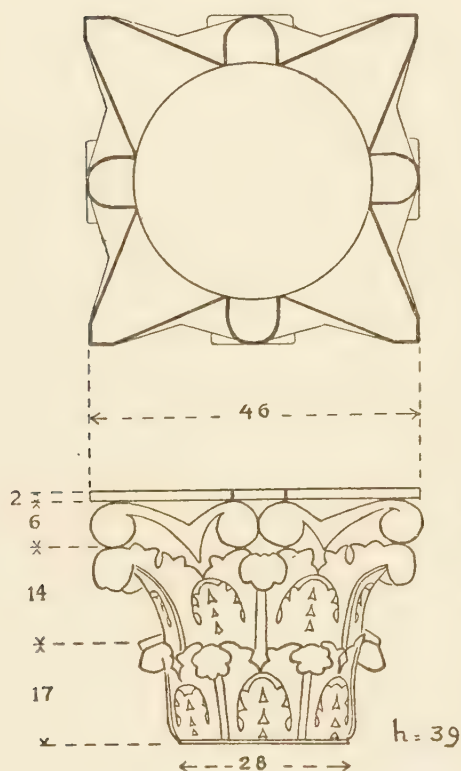


FIG. 19. Capital No. 53

of decoration. Of these the most important are the stiffly angular outline of the leaves (Fig. 18, *a*), replacing the characteristic oval eyelet by a long, square-based slit; the stiff 'prick-eared' inner tips to the upper lobes of each leaf; the long pendulous middle lobes; the deep grooves marking the axes of the lobes and outlining the main stems; the flat feeble volutes, of which the inner spirals are suppressed; the bud at their point of separation, and the segmented cup-shaped devices between them (Plate XIII and Fig. 18, *b*).

All these features are characteristic of one or other of the known types of fifth-century capital. The grooved axes and stems and the feeble curtailed volutes and buds are to be seen on the capital from St. Anne's (Pl. XIII, A). For the tall angular leaves a good parallel is a pair of capitals from St. Stephen's in Jerusalem, both probably of the middle fifth century.¹ From these and other details, such as the splayed middle rib, we conclude that this is a fifth-century capital which found its way to Kh. Mafjar with the second-hand columns and bases.

Nos. 53 and 54 (Pl. XVI) are from the ruins of the pool. We hesitated at first to attribute these two capitals to the Umayyad sculptors. Firstly both are cut from a limestone which is somewhat closer in texture than the rest. Perhaps for this reason the carving is on the whole sharper and the modelling of details more sensitive than usual. Then there is on the base of No. 54 a mason's mark to which we have no parallel from other parts of the site.² It is in the form of a K and has been hammered out with a point. Lastly both capitals have peculiarities in composition, form, and decoration which distinguish them from any others we have found at Kh. Mafjar.

In composition the chief points of difference lie in the plan of the abacus (Fig. 19) and in the absence of the usual ornament between the pairs of volutes. Here the two inner volutes touch each other and are hooded by

total height of the capital (nearly 3:5). In all other column capitals of the courtyard the height of the two wreaths is approximately equal, the lower being as a rule slightly the taller of the two. Here the upper wreath is over twice as high as the lower (about 27:12).

¹ Vincent and Abel, *Jérusalem nouvelle*, p. 794 and Pl. LXXIX, 3 and 4. Also Weigand, *Byzantinische Zeitschrift*, XXIII (1914-19), Pl. II, 3 and III, 1.

² Cf. *QDAP*, Vol. V, p. 137, Fig. 3. Since writing this I have noticed a similar mark on the masonry of the gateway.

the semicircular projection of the abacus. Both abacus and volutes merge by means of bevelled surfaces into their background.

The lower ring of leaves rises neatly above a narrow collar, 1 cm. deep, at the base of the capital.

The foliage as usual consists of two wreaths of eight acanthus leaves. It differs (Fig. 20,

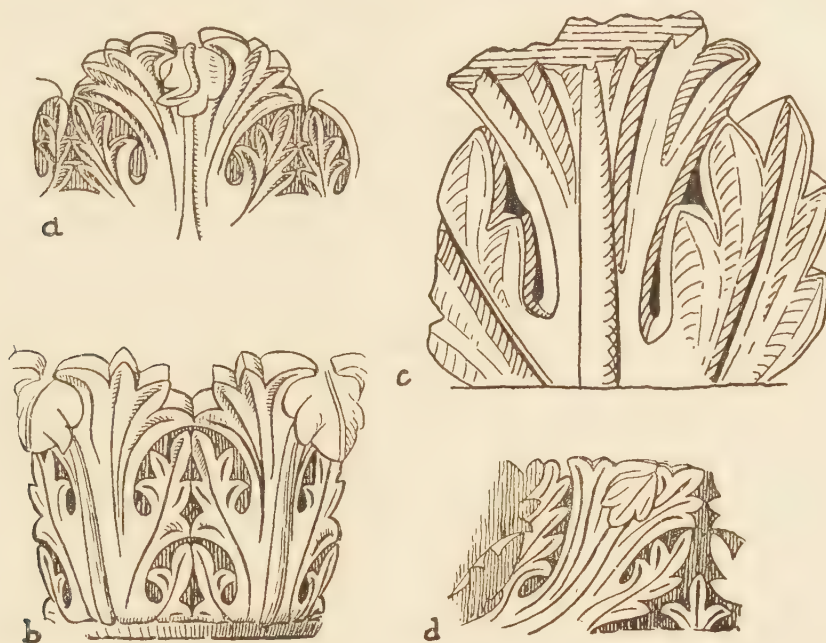


FIG. 20. Types of *acanthus spinosus*. *a* and *b*, Capitals 53 and 54; *c*, Stucco fragment; *d*, Archivolt of kiosk

a and *b*) from any of the capitals so far described in being based on the *Acanthus spinosus* as represented in the so-called Theodosian capitals of the fifth century. In this the lower leaflets rise more or less vertically and independently from the base of the wreath and are adorned on both sides with numerous serrated tips.

Here the lower leaflets are softened in outline, but their independent growth from the base of the leaf and the number and arrangement of their tips on both sides are clearly influenced by the Theodosian type.

Had these capitals been found as isolated exceptions in an otherwise homogeneous series it would have been tempting to conclude, as we did of No. 14, that they were importations from another site. But in the pool the conditions are rather different, since in that building they are the only capitals of their size that have been found and in style are perfectly consistent with each other. At the same time there are positive reasons which lead us to believe that both capitals are the work of Umayyad craftsmen.

In the first place, although their affinities are with the thorny acanthus of the Theodosian capital, which after the fifth century fell out of use in Palestine until reintroduced on capitals of the Crusader period, they do not at all conform to the composition of the Theodosian capital, nor do they closely resemble any actual fifth- or sixth-century examples that I know of. Secondly, there are other authentic examples of this form of

acanthus being used by the decorators of Kh. Mafjar. Fig. 20, *c*, is a fragment from the stucco decoration of the entrance to the palace with which may be compared No. 37 on Plate XIV, a fragment of an acanthus frieze in limestone from the central court. In the pool itself the archivolts of the main arches supporting the dome are decorated with a band of acanthus foliage elaborated from the same type (Pl. XVI, *A*). It represents a chain of overlapping leaves¹ slanting upwards from the haunch of each arch, towards the keystone. The leaves (Fig. 20, *d*) consist of a three-tipped drooping central lobe with the usual three- or four-tipped lobe on each side. Below is a pair of almost independent leaflets of which the uppermost, as the foliage slopes, is immensely developed, to reach the outer edge of the border, while the lower retains the normal proportions, analogous in form to the lower leaflets of Nos. 53 and 54. The sinuous middle rib of each leaf links them with the capitals of the mosque and pool.²

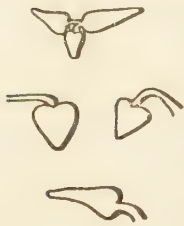


FIG. 21. Ivy leaf motives. Capitals 43 and 44

The third point of connexion between these capitals and others on the site consists in the wind-blown tips which recall a characteristic feature of the mosque capitals. Lastly, the upper part of each leaf, with the lateral lobes enlarged to bend round the back of the middle one, is perfectly characteristic of the other Mafjar styles.

The combination, on one piece, of imitated and original elements, is consistent with the character of Umayyad work as we see it in other parts of the site, and we are inclined to conclude from the evidence as a whole that these capitals, too, were cut for the building in which they were found.

The last of the unclassified capitals, Nos. 43 and 44 (Pl. XVI), were found, unrelated to any specific position in the building, on the virgin soil near the south side of the forecourt. It is possible that they were intended for the colonnade which seems to have existed along that side of the forecourt, but it is also possible that they had merely been placed near the entrance provisionally before being moved to some other destination.

The capitals are 66.0 cm. high, rather larger than any others on the site. They are cut in the usual loose-grained limestone, are in very bad condition, and are obviously a pair.

The decoration consists of two rings of acanthus foliage, which in No. 43 is 'wind-blown'. Above there emerge on each face two leafy sheaths which give rise to pairs of volutes. The sheaths are carried on cup-shaped stems. The volutes support an abacus from 4 to 5 cm. deep. The triangular space enclosed by each pair of volutes is filled with a heart-shaped leaf and stem or with a combination of two or more such leaves (Fig. 21). On one capital, No. 43, the inner volutes touch; on the other they are separated by a space containing, in the only intact face, a rosette. All the corners are lost.

Except for the stone, which is identical, these capitals have little in common with any of the main Mafjar groups. In all of those the decoration is rigidly divided into horizontal zones; here the upper leaves and volute sheaths spring from well down in the register below. Adjacent leaves in consequence are pushed apart, tips no longer touch,

¹ In the original coloured alternately yellow and red.

² Cf. the wind-swept acanthus frieze, in stucco, at Qasr el-Heir el-Gharbi. Schlumberger, *Syria*, Vol. XX (1939), p. 350, Fig. 22.

and the characteristic tracery of the voids disappears. There is no cramping of the volutes, but on the contrary ample space is allowed for the development of sheaths and stems which on all other Mafjar capitals are suppressed.

The leaves are sharp-tipped and, especially in No. 44, stiffly angular in outline. Stems and volutes are outlined, and the axes of folioles emphasized, by deep grooves as in No. 14. On the analogy of that capital these might conceivably have been brought here from some fifth- or sixth-century¹ Christian building in the neighbourhood, possibly one of the churches in Jericho.

Nevertheless the capitals do not strike one as being earlier work than the rest of the series.

Although the wind-blown acanthus was current in Syria and Egypt as early as the sixth century,² there is no evidence for the existence of the type in any provincial Palestinian site of that date. On the other hand, we know from the voussoirs of the pool and from details on the mosque capitals that the builders of Mafjar were familiar with the idea and used it.

Again, certain details, like the detached heart-shaped leaves between the volutes, which have no function at all except to fill up space, are not represented in capitals of the fifth and sixth centuries.³ Lastly the carefully elaborated acanthus sheaths with their stylized cup-shaped stems represent a more conscious and therefore probably a later reversion to an obsolete type than the merely atrophying volutes and sheaths of the fifth century.

On the whole it seems most probable that both capitals are eighth-century work, and that the 'early' features are deliberate archaisms introduced by a sculptor with some classical Corinthian capital in mind.⁴

R. W. HAMILTON.

(To be continued)

¹ The developed leafy volute-sheaths, though often dispensed with, were still common, if only archaistic, on Palestinian capitals of the fifth and sixth centuries. Cf., for example, the capital from St. Anne's reproduced on Pl. XIII, where the stem is omitted, or the capitals from Justinian's basilica at Bethlehem of the sixth century.

² At St. Symeon Stylites (de Vogüé, *La Syrie centrale*, Pl. 146), and at Sakkara (Duthuit, *La sculpture copte*, Pl. XLII, d).

³ The corresponding feature on fifth-century capitals, of which we have an example in No. 14, is the bud.

⁴ On the revival of obsolete, as distinct from the continuation of current pre-Islamic themes by Umayyad artists, see remarks by Schlumberger in *Syria*, XX (1939), p. 360.

INDEX OF CAPITALS

All capitals and fragments of capitals separately recorded are included and numbered in a single series. The same numbers are used in the text and plates.

Abbreviations: C.C. = Central Court; F.C. = Forecourt; N.P. = North Portico; S.P. = South Portico.

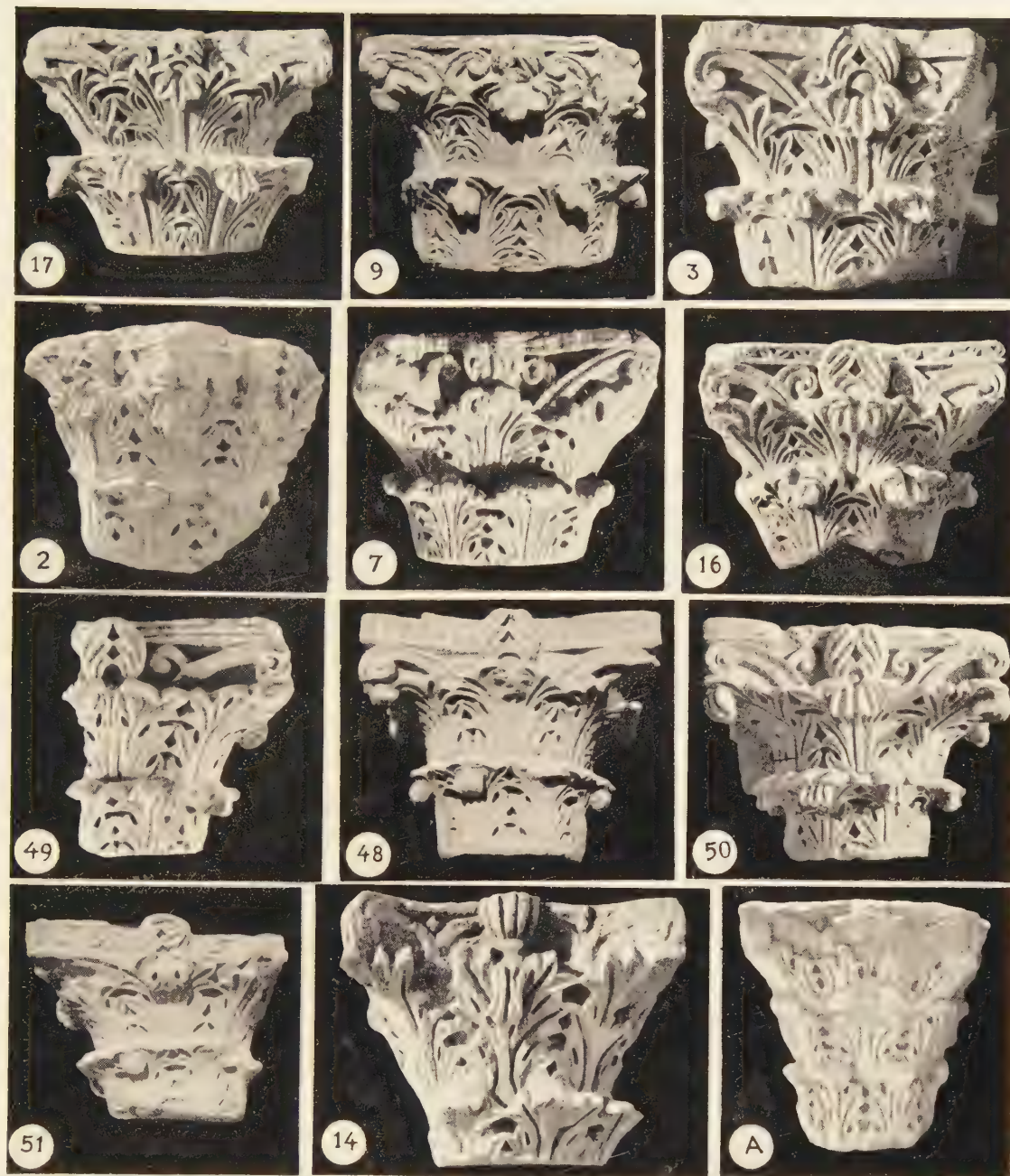
No.	Description	Provenance	Height	Photograph	Remarks
			cm.		
1.	Limestone column capital. Type A. Presumed lower order of C.C.	C.C., N. side	47	Not illustrated	Resembles 2.
2.	" " "	C.C., W. side	52	Pl. XIII, 2 corner view	..
3.	" " "	C.C., S. cloister	48	Pl. XIII, 3	Abacus as Fig. 6.
4.	" " "	C.C., W. side	55	Not illustrated	Much damaged. Resembles 3. Abacus as 2.
5.	" " "	C.C., S. side	51	" "	Closely resembles 3. Abacus as Fig. 6.
6.	" " "	C.C.	54	" "	Damaged. Resembles 2.
7.	" " "	Room VIII off S. cloister	47	Pl. XIII, 7	Ivy-leaf (?) ornament between volutes.
8.	" " "	Surface, middle of C.C.	47	Not illustrated	Volutes and other details as 9.
9.	" " "	Room I a, in W. range	47	Pl. XIII, 9	Volutes as Fig. 4, d.
10.	" " "	C.C., N. side	51	Not illustrated	Much damaged.
11.	" " "	C.C., E. side	48	" "	Damaged. Resembles 2.
12.	" " "	C.C., N. side	54	" "	Much damaged. Resembles 2.
13.	" " "	C.C.	53	" "	Much damaged.
14.	Limestone column capital. Unclassified	C.C.	48	Pl. XIII, 14	A re-used capital. See p. 59 f.
15.	Limestone column capital. Type A. Presumed upper order of C.C.	C.C., S. cloister	35	Not illustrated	Damaged.
16.	" " "	"	38	Pl. XIII, 16	
17.	" " "	"	40	Pl. XIII, 17	
18.	" " "	C.C., N. side	44	Not illustrated	Resembles 3.
19.	" " "	C.C.	Not measurable	" "	Lower part missing. Abacus, volutes, and upper ring of leaves resemble 16.
20.	Limestone respond capital. Type A. Presumed lower order of C.C.	C.C., near NW. corner pier	61½	Pl. XIV, 20	..
21.	" " "	Near SW. corner pier	59	Pl. XIV, 21	..
22.	" " "	" "	59	Pl. XIV, 22	Fragmentary.
23.	Limestone respond capital. Presumed lower order	C.C., near NW. corner	Not measurable	Pl. XIV, 23	Upper part missing. Note five- tipped leaves.
24.	Limestone respond capital. Type A. Order uncertain	C.C., at SE. corner	49	Pl. XIV, 24	Width of lower leaves halved. Abacus and collar at base shal- low, possibly upper order (?).
25.	Fragment of respond capital. Order uncertain. Limestone. Type A	C.C., SE. corner	49	Not illustrated	Corner fragment, apparently re- sembles 24, but with upper leaves of same width as lower. Vertical dimensions correspond in detail.
26.	Fragment of respond capital. Type A. Presumed upper order of C.C. Limestone	C.C., NE. corner	44	" "	Fragmentary.
27.	Fragment of respond capital. Type A. Presumed upper order. Limestone	Surface, above room VII a near NE. corner of palace	41	" "	Damaged and worn.
28.	Respond capital. Presumed upper order. Limestone	C.C., E. side	43	Pl. XIV, 28	Several unusual details in this capital: (a) suppression of vo- lutes; (b) fluting on abacus (but cf. 48, Pl. XIII) and exceptional

KH. MAFJAR. STONE SCULPTURE, I

No.	Description	Provenance	Height	Photograph	Remarks
			cm.		
					height; (c) six-petalled rosettes instead of the usual half-palmettes on the abacus on each of the short sides; (d) form of middle lobes, but cf. 48 and 49 lower wreath; (e) vertical arrangement of leaves in two wreaths; (f) red paint in recessed surfaces.
29.	A limestone fragment, probably of pilaster frieze. Presumed upper order	Near NW. corner pier, C.C.	41	Not illustrated	Fragmentary and damaged. Resembles 33. See below.
30.	Fragment of pilaster frieze. Limestone. Presumed upper order angle pier	Near SW. corner pier, C.C.	45	Pl. XIV, 30	Note thin abacus and slender volutes.
31.	Fragment of respond capital (?). Limestone	C.C., near NW. corner	Not measurable	Pl. XIV, 31	Well-finished carving. One of the best pieces in this style.
32.	Corner fragment of pilaster frieze. Limestone	C.C., NW. corner	40	Not illustrated	Resembles 33. See below.
33.	From pilaster frieze. Limestone	N. cloister, C.C.	40	Pl. XIV, 33	The width of this stone is 80 cm.
34.	" " "	W. cloister	45½	Not illustrated	Resembles 33. Corner stone.
35.	From pilaster frieze. Fragment.	Near NW. corner pier	Not measurable	" "	Front width 80 cm. Ornament returns 46 cm. at side.
36.	" " "	" "	41	" "	Volutes and abacus missing. Leaves resemble 33. Corner fragment resembles 33.
37.	Corner fragment of acanthus frieze	C.C., SE. corner	24	Pl. XIV, 37	The only piece of its kind. For acanthus type see pp. 61-2. Width at front 30 cm. Return of moulding at side 25 cm.
38.	Half quadruple capital. Limestone. Type C. Lower order of front portico	S.P.	42	Not illustrated	Damaged. Resembles 39, next below.
39.	" " "	"	42½	Pl. XVI, 39	Resembles 38, and may belong to the same capital.
40.	Quadruple capital. Limestone. Type C	N.P.	39½	Not illustrated	Resembles 41, next below.
41.	" " "	"	40	Pl. XVI, 41	
42.	Half quadruple capital	"	38	Pl. XVI, 42	Acanthus as in Fig. 16, c.
<i>Note:</i> Several other smaller fragments of capitals of Type C from the same porticoes are not separately recorded.					
43.	Limestone capital. Type unclassified.	F.C., S. side	66	Pl. XVI, 43	The leaf ornament between volutes differs slightly on each face. Wind-blown acanthus. Developed volute sheaths. Inner volutes touch.
44.	" " "	"	71½	Pl. XVI, 44	Straight acanthus. Inner volutes separated by a rosette.
45.	Limestone column capital. Upper order of front porticoes. Type A.	S.P., 1st column from S.	34½	Not illustrated	Damaged. Resembles 50 below.
46.	" " "	S.P., 2nd column from S.	41	" "	Damaged. Resembles 50.
47.	" " "	N.P., 2nd column from S.	39½	" "	Acanthus as No. 50, Pl. XIII. Abacus as Fig. 6, f.
48.	Limestone column capital. Upper order of front porticoes. Type A	N.P., 3rd column from S.	41½	Pl. XIII, 48	For abacus ornament and form of middle lobe in lower leaves, cf. Pl. XIV, 28. Calathus rim indicated. Inner volutes suppressed.
49.	Fragment of capital. Type A. Presumed upper order of front portico. Limestone	Room Vb (S. half of E. range)	44	Pl. XIII, 49	Gilded on red ground, with recessed surfaces blue. Presumed destination front porticoes from

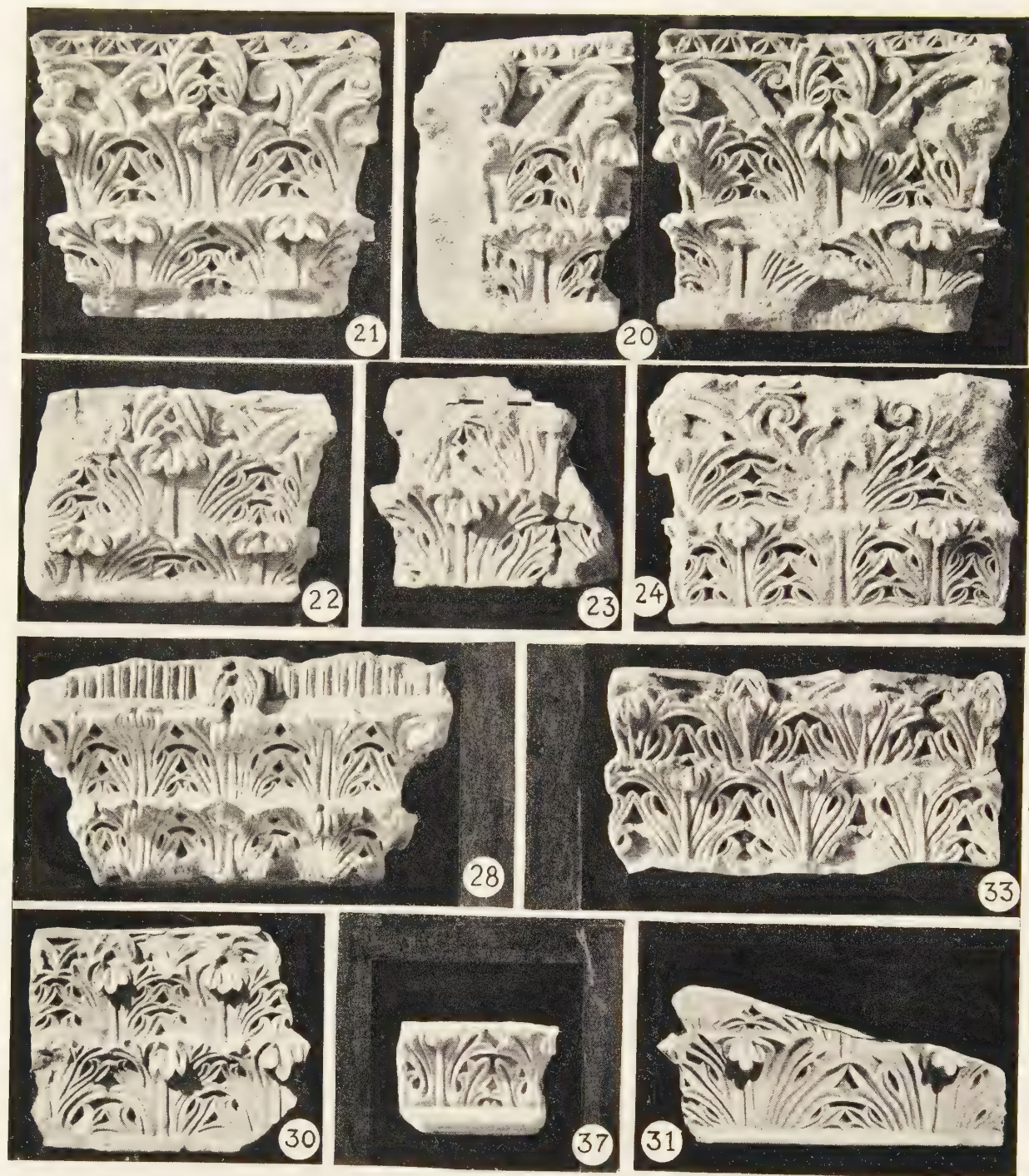
R. W. HAMILTON

No.	Description	Provenance	Height cm.	Photograph	Remarks
					detailed resemblances with 51, 50, and others. Small fragments of a similar gilded capital from a room north of the gateway.
50.	Capital. Upper order of front porticoes. Type A. Limestone	S.P.	40	Pl. XIII, 50	Fractured.
51.	" " "	N.P., 1st column from S.	41	Pl. XIII, 51	Cf. 48 and 49. Inner volutes suppressed. Abacus as Fig. 6, g and Fig. 5, e.
52.	Capital. Limestone. (Rather closer grained than usual). Unclassified	F.C.	54	Pl. XVI, 52	Three tiers of leaves. Style of acanthus resembles Type C. No abacus. Only example of its kind.
53.	Limestone capital	Pool	39	Pl. XVI, 53	Cf. Figs. 19 and 20, and p. 60. The stone is closer grained than usual.
54.	" "	"	40	Pl. XVI, 54	Same style and stone as 53. Mason's mark on base.
55.	Part of limestone pilaster capital. Type B	F.C., from remains of arcade on E. side	48	Pl. XVI, 55	Photograph shows S. side of capital. Width of decorated surface at top 57 cm. Original width of W. face exceeded 57 cm. At least one more stone needed to complete the capital.
56.	Part of limestone pier capital. Type B	Pool, NW. corner	73	Pl. XV, 56	From one of the piers of the octagonal kiosk.
57.	" " "	Room VII a, NE. corner of palace	75½	Pl. XV, 57	" " "
58.	Limestone column capital. Type B	Mosque	50½	Pl. XV, 58 (twice).	No two sides are quite alike. Probably E. column of S. arcade.
59.	Limestone respond capital. Type B	"	52	Pl. XV, 59	Photograph shows side view. Note unfinished condition of lower acanthus wreath. From S. respond on W. wall.
60.	" " "	Room VII a	52½	Pl. XV, 60 (twice)	Photographs give front and side views. Undoubtedly intended for mosque. Second side unfinished as 59.

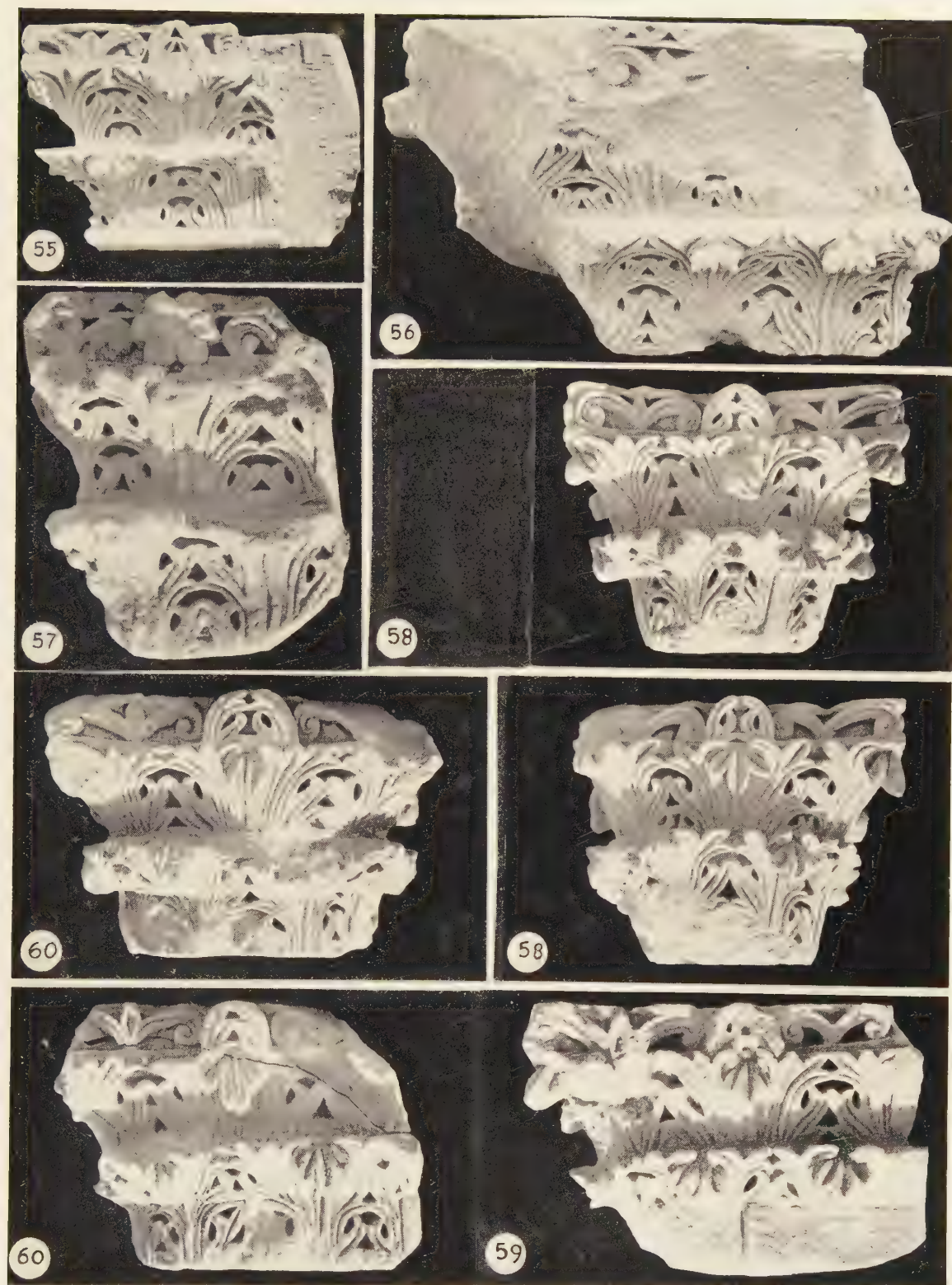


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STONE SCULPTURE, KH. MAFJAR
Column Capitals, type A (except No. 14 and Fig. A)
Fig. A in St. Anne's, Jerusalem



STONE SCULPTURE, KH. MAFJAR
Pilaster Capitals, type A (except No. 37)



STONE SCULPTURE, KH. MAFJAR
Column and Pier Capitals, type B



STONE SCULPTURE, KH. MAFJAR
Various Capitals, etc. (Two upper rows, type C)

TWO IRON AGE TOMBS FROM 'AMMAN

THE tomb (called A) was located on the north side of Jebel Jofeh, in land belonging to 'Abdullah ibn Sa'ud, and was discovered in the course of digging foundation trenches for building.

A few pots were removed and brought by the finder to the Department of Antiquities, Trans-Jordan, which then took over clearance of the area. All soil from the chamber

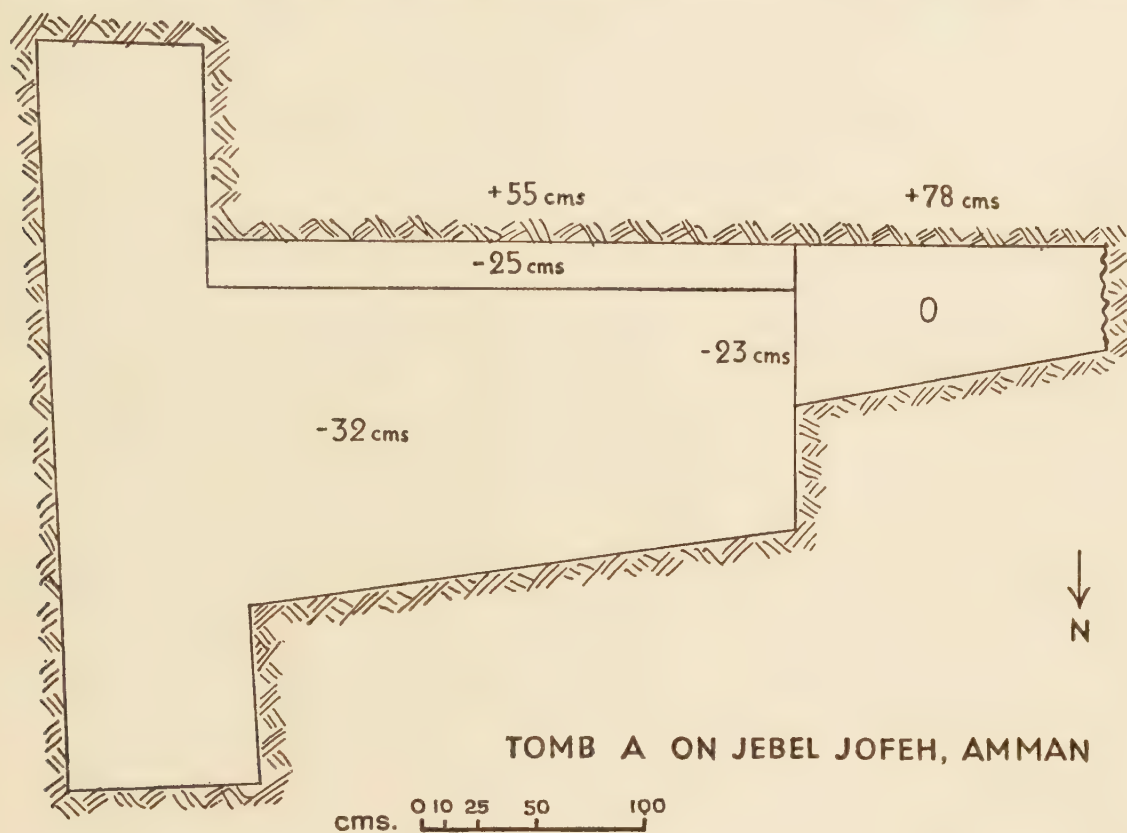


FIG. 1.

and its vicinity was sieved, but only sherds, two bronze ear-rings, the horse's head of the rider figurine, and an ivory seal were recovered. The burials had been disturbed anciently on at least two separate occasions, the first indicated by the presence of four pots of the Hellenistic period,¹ and the second by the quarrying away of the roof in Roman times: a few Roman sherds were found in the chamber itself. Most of the pottery was smashed, and some of the sherds were scattered outside the tomb. A maximum of 78 cm. height of chamber wall remained after quarrying operations, and on the north side only 20 cm. was left.

The tomb appears to have consisted of a single chamber, with an entrance on the west (see plan, Fig. 1); it was not possible to clear this entrance to its limit. The cutting was very rough, as was also the general layout. Cupboard-like recesses were cut at the east

¹ See p. 68.

end of the north and south walls, in the southern of which was a mass of broken animal bones, too fragmentary to be identifiable, which may represent the remains of the offerings. Many knuckle bones were also found, but these were mixed up with the pottery just inside the entrance and were clearly separate from the other animal bones. The floor of the tomb was sloping gradually from east to west and a low bench ran along the foot of the south wall. A few very fragmentary human bones, including some of the skull, were found immediately below the entrance step, together with such of the pottery as was unbroken. The seal, ear-rings, and horse figurine also came from this area. There was nothing to indicate the number of burials, but the quantity of pottery suggests more than one.

Contents of the Tomb

The *Ivory Seal* (Pl. XVIII, 42). Both form and material of the seal are apparently unique; nothing like it is shown in Diringer's *Corpus*,¹ nor is anything similar published elsewhere. The top is broken, but it seems probable that it ended in a ring or loop; the jagged nature of the break suggests something quite small, as a long extension, such as a straight rod, would have snapped more cleanly.²

The *Pottery Horse and Rider* (Pl. XVIII, 41). The head of the rider is unfortunately missing, and the break appears to be an ancient one. The body of the animal is hollow, probably made on a wheel, with a hole pierced just above the tail. The rider and the head, neck, legs, and tail of the animal have been applied on. The head and neck together with the upper part of the rider are covered with a red slip and the remainder with a cream slip. The limbs of the rider are very crudely formed; the left arm hangs down the side and is attenuated into a band which passes across the animal's chest and is painted black. The right arm is upon the neck of the horse and ends just behind its right ear; it has faint traces of black paint. The harness is indicated by raised bands on the head of the horse and consists of a double band passing above each eye, crossing on the nose down into the mouth, and ending off in another double band across the nose. The mane is painted black. A second black band is painted parallel with the rider's left arm, but it is not clear what it is intended to represent.

The *Pottery* (Pls. XVII–XVIII). The tomb yielded forty pots which are either complete or can be reconstructed, and fragments of some twelve others, mostly duplicates: a good variety of forms is present. Several specimens have a bichrome decoration in black and white, and others are wheel- or hand-burnished. Most forms differ in some particular or other from contemporary Palestinian examples, and only a very few can be exactly paralleled.

With the exception of Nos. 21, 22, 39, and 39A it is a homogenous group; these four specimens probably date from the Hellenistic period,³ and may represent an intrusive burial, though the ancient robbing had mixed everything up and destroyed any evidence that might have confirmed such a suggestion. The only specimens which offer a satis-

¹ D. Diringer, *Le iscrizioni antico-ebraiche palestinesi*, Firenze, 1934.

² For a discussion of the inscription see the article by Professor Driver on p. 81 f.

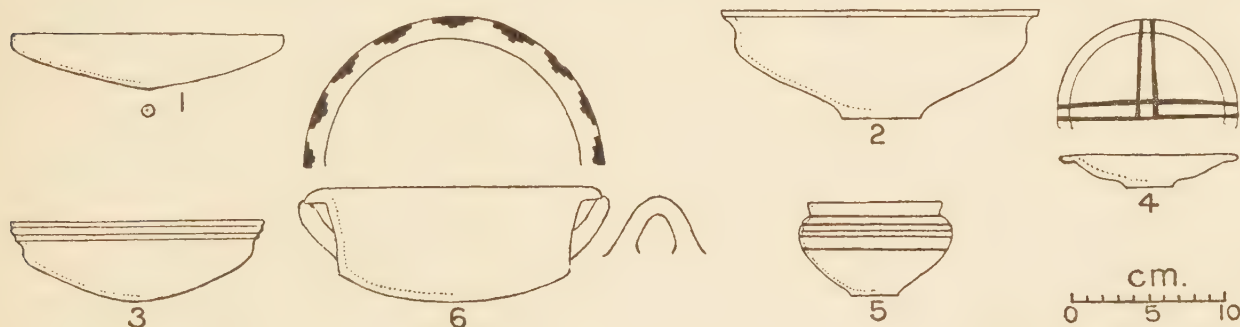
³ But see pp. 75–7 for a revision of the date of Nos. 21 and 22.

factory clue for dating the main group are Nos. 28 and 29, which are generally attributed to the eighth century B.C.; the remainder could well conform to such a date. In general the ware is of rather poor quality, not well levigated, and with a fair admixture of grits; the latter seem to consist of flint and limestone, and a good deal is probably inherent in the clay. Firing is soft, but even; with one or two exceptions the colour is not patchy. The slip or wash seems to have been applied by brush, as it sometimes ends in a sharp line about an inch from the base of the pot, and no specimens show trickles of it running down the surface. Burnishing is quite well done, sometimes of the 'all-over' variety which so nearly resembles polishing. An interesting point is that very few of the local forms have ring-bases. The decoration is roughly done, but the 'crowstep' is at this date a new motif for Palestine and Trans-Jordan, and shows that it was familiar in the country long before the Nabataeans used it in their architecture.

It is perhaps not altogether surprising to find that most of the forms vary from contemporary Palestinian usage, as our knowledge of Trans-Jordan pottery has so far been confined almost entirely to sherds. Decorated sherds from Edom and Moab had indeed shown differences, but from 'Amman little has so far been seen. Undecorated sherds are valueless for comparative purposes except when they clearly indicate the form of the vessel; local variations of ware, technique, and firing are alone sufficient to account for divergencies from contemporary material elsewhere.

Inventory of Finds. Group A

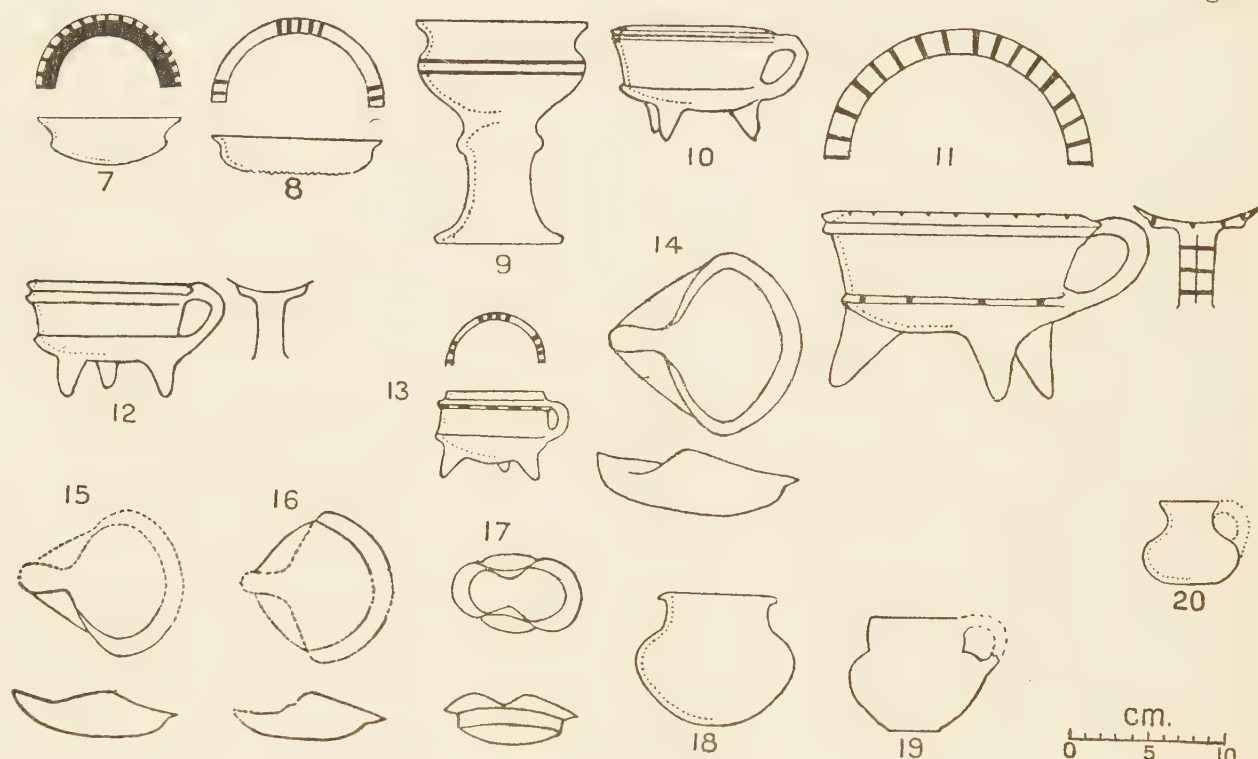
1. Shallow bowl with miniature ring-base, soft pink ware, red slip, traces of burnish outside. The slip extends only half-way down the bowl on the outside. 1 ex. and fragments of another. (4I. 837.)¹ (Pl. XVII, 1.)



2. Bowl with flared rim, soft pink ware, some grits, flat base, red slip, circular burnishing in and out. (4I. 838.)
3. Round-bottomed bowl, soft pink ware, red slip, circular burnishing in and out. 3 exs. (4I. 839-4I.)¹ (Pl. XVII, 3.)
4. Shallow bowl, flat base, soft pink ware, some grits, red slip, burnished outside, cross consisting of a white band between black lines on the inside. (4I. 842.) (Pl. XVII, 4.)
5. Small globular pot, flat base, soft pink ware, red slip, circular burnishing in and out, black and white bands on the shoulder outside. (4I. 843.) (Pl. XVII, 5.)
6. Round-bottomed bowl, soft pink ware, some grits, red slip, circular burnishing in and out, incised concentric circles on base, black decoration on the rim. (4I. 844.)

¹ Numbers in brackets are Palestine Archaeological Museum numbers.

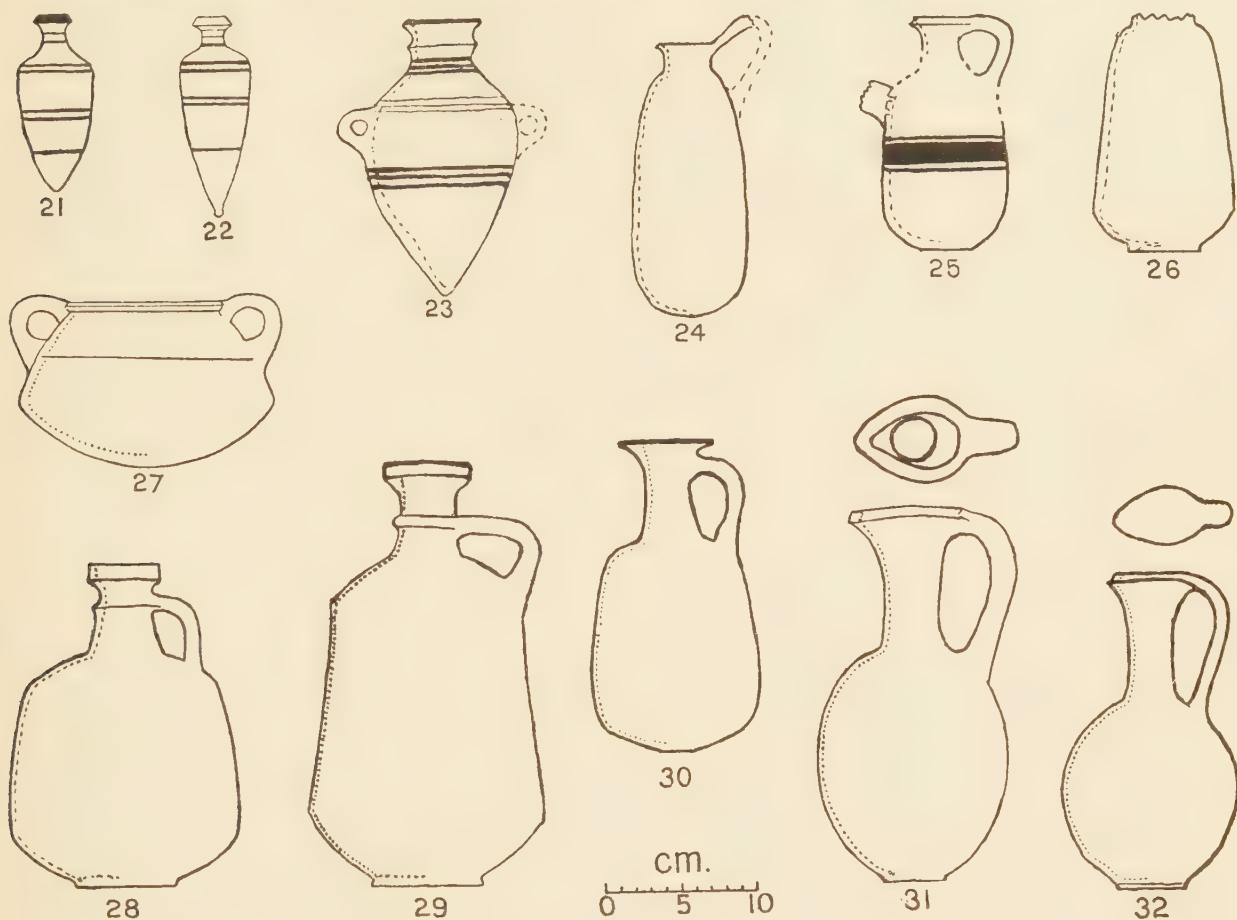
7. Small round-bottomed bowl, flared rim, pink ware, red slip, circular burnishing inside and out, black and white decoration on inside of rim. (41. 845.) (Pl. XVII, 7.)
8. Shallow bowl, incomplete, soft pink ware, red slip, circular burnishing in and out, black and white decoration on rim. (41. 846.)
9. Incense burner, soft rather coarse pink ware, grits, traces of red slip and burnish, black and white bands on outside. (41. 848.) (Pl. XVII, 9.)
10. Bowl on three legs, one handle, soft pink ware, some grits, red slip outside, vertical and horizontal burnishing all over outside, no burnish on legs or handle. (41. 847.) (Pl. XVII, 10.)
11. Large bowl on three legs, one double handle, soft reddish-pink ware, buff core, some grits,



- red slip all over, vertical and horizontal burnishing, outside, black stroke decoration on rim, handle, and keel. (41. 849.) (Pl. XVII, 11.)
12. Bowl on three legs, one handle, soft pink ware, grits, red slip all over, horizontal burnishing outside. Slight trace of fire on the inside. (41. 850.)
13. Small bowl on three legs, soft pink paste, red slip outside and a short way down the inside, vertical and horizontal burnishing outside, black and white decoration on rim and projecting ridge. (41. 851.)
14. Lamp, soft pinkish-buff ware, grits, indications of use. (41. 852.) (Pl. XVII, 14.)
15. Lamp, reddish-brown ware, brown core, fine grits, wash (?), used. (41. 853.)
16. Lamp, reddish-pink ware, grey core, grits, buff wash. (41. 854.)
17. Double-ended lamp (?), pink ware, some grits, unused. (41. 855.) (Pl. XVII, 17.)
18. Small round-bottomed vessel, brownish-buff ware, some grits, cream wash. (41. 856.) (Pl. XVII, 18.)
19. Small flat-bottomed jug, one handle, brownish-red ware, grey core, grits, buff slip. (41. 857.)
20. Small round-bottomed jug, one handle, buff ware, gritty. (41. 858.)

TWO IRON AGE TOMBS, 'AMMAN

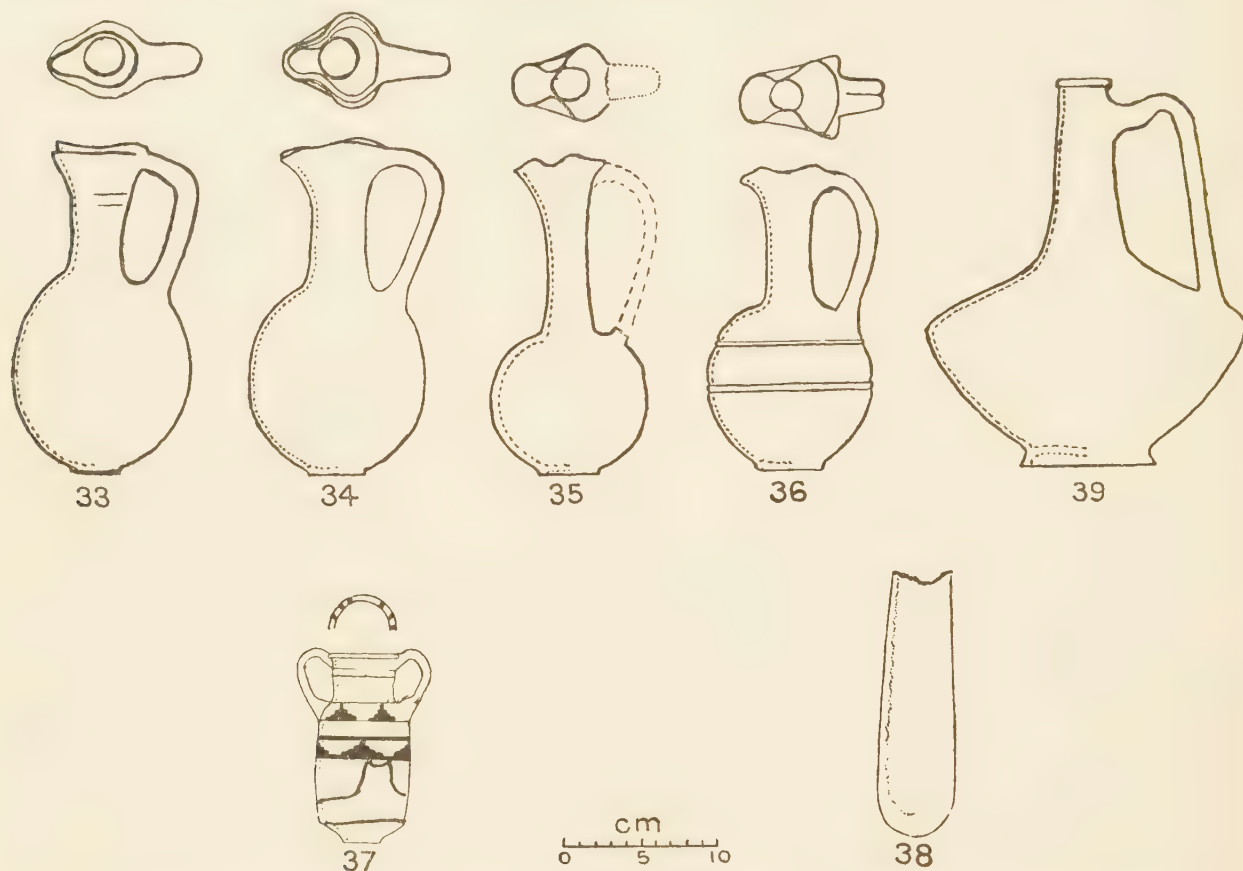
21. Flask, pointed base, pinkish ware, some grits, cream slip, polished, black bands. (41. 859.)
 22. Same as No. 21. (41. 860.) (Pl. XVII, 22.)
 23. Flask, pointed base, two handles, soft pink ware, buff core, red wash, black (and white ?) lines, incised lines on shoulder. (41. 861.)
 24. Dipper flask, hard reddish-pink ware, cream wash. (41. 862.) (Pl. XVII, 24.)



25. Flask with strainer spout and one handle (position of handle reconstructed, not certain), soft brownish ware, grits, brown wash three-quarters way down, black and white bands. (41. 863.)
 26. Flask (?), ring base, soft reddish-brown ware, some grits, red wash, traces of burnish. (41. 864.)
 27. Cooking-pot, reddish-brown ware, grits, indications of use. (41. 865.) (Pl. XVII, 27.)
 28. Water decanter, one handle, ring base, soft ware, red outside, grey inside, grits, red slip, traces of burnishing. (41. 866.)
 29. Water decanter, one handle, deep ring base, soft ware, red outside, grey inside, grits, pink slip, traces of horizontal burnishing. (41. 867.) (Pl. XVII, 29.)
 30. Jug, one handle, flat bottom, reddish-brown ware, grits, red-brown slip, remains of burnishing. (41. 870.) (Pl. XVII, 30.)
 31. Tall-necked jug, one handle, pinched mouth, reddish-brown ware and wash, some grits, flat base. 2 exs. (41. 871, 872.) (Pl. XVII, 31.)
 32. As 31, slightly smaller, red wash extends to within $\frac{3}{4}$ in. of base. 2 exs. (41. 873, 874.)

LANKESTER HARDING

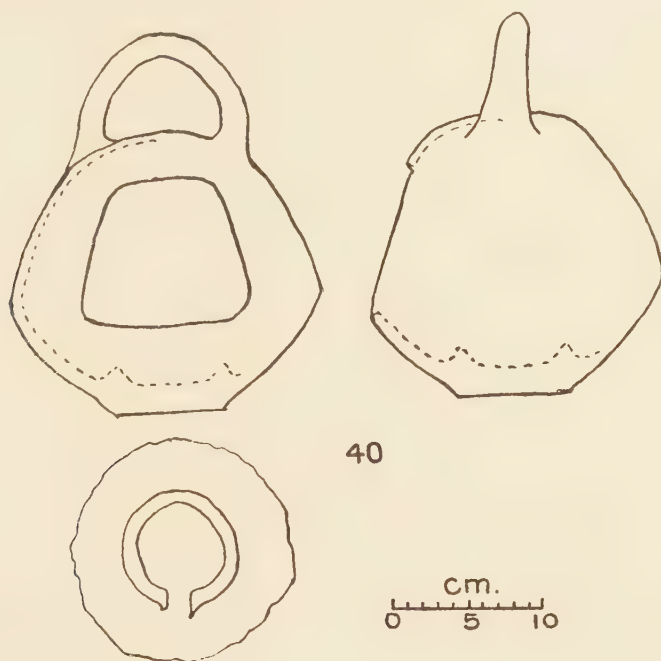
33. As 32, mouth ribbed and rather more pinched. A second example in a lighter shade of ware and wash. (4I. 875.) (Pl. XVII, 33.)
 34. As 33, trefoil mouth. (4I. 877.)
 34A. As 34, soft ware, reddish-brown outside, grey inside, red wash as in 33. (4I. 878.)
 34B. As 34, but with a band of burnishing on lower half of body. (4I. 879.)



35. Tall-necked jug, one handle, ring base, rough brownish-red ware, grits, brown-red slip, all-over burnish, vertical on neck, horizontal on body. (4I. 880.)
 36. Tall-necked jug, trefoil mouth, one double handle, flat base with slightly raised centre, two ribs on body, soft fine ware, light reddish-brown outside, buff inside, reddish-brown slip, all-over burnish, vertical on neck, horizontal on body. (4I. 881.) (Pl. XVII, 36.)
 36A. Duplicate of 36 except for colour of ware, which is pinkish-buff, red wash comes to within an inch of base. (4I. 882.)
 37. Small two-handled vase, flat base, reddish-brown ware, some grits, traces of pinkish slip, decoration consists of white painted rim with black strokes, white band on shoulder with black 'crowstep' decoration, white band between black lines with 'crowstep' decoration just below handles, black band with uprights (?) on the keel. (4I. 883.) (Pl. XVII, 37.)
 38. Elongated bottle, incomplete, wheel made, hard ware, reddish-brown outside, grey inside, some grits, red wash to within one inch of the bottom; vague traces of some black decoration (or accident?). (4I. 884.)
 39. Bottle-necked vase, one handle, deep ring base, very hard grey metallic ware, brown skin, black to brown wash. (4I. 868.) (Pl. XVII, 39.)
 39A. A local imitation of 39, soft reddish-pink ware, incomplete. (4I. 869.)

TWO IRON AGE TOMBS, 'AMMAN

- 40. Lantern. (41. 890.) (Pl. XVII, 40.)
- 41. Pottery horse and rider. (41. 888.) (Pl. XVIII, 41.)
- 42. Ivory seal. (41. 889.) (Pl. XVIII, 42.)
- 43. Bronze earring. (41. 921.)



Since writing the above another group has come to light on a lower ledge of the hill, immediately below the previous tomb, in land of Felah Huseyn. This will be called Group B.

The period of Group B is identical with that of Group A, as are many of the pots. A few new forms appear, but the most outstanding feature of Group B is the great number of flasks of types 21 and 22. There are remains of eleven in all, of varying sizes and proportions, and their presence in such quantity compels us to reconsider the question of dating them later than the other pots, as previously suggested.¹ An adjustment is obviously needed, but which way it should operate is by no means clear. The author is inclined to favour making these flasks contemporary with the local wares (i.e. eighth century B.C.) rather than lower the date of these.

An interesting and unusual piece is the vase in the form of a bull, No. 67. The modelling of the head is remarkably good, and the tail curving over the flank and the cloven front hoof show some attempt to reproduce the characteristics of the animal. In the body, however, artistry had to give way to the practical purposes for which the vase was intended.

It is questionable whether the square palette, No. 68, is contemporary; the bone pin, No. 70, is most certainly not. But a square slab of marble could be of any date.

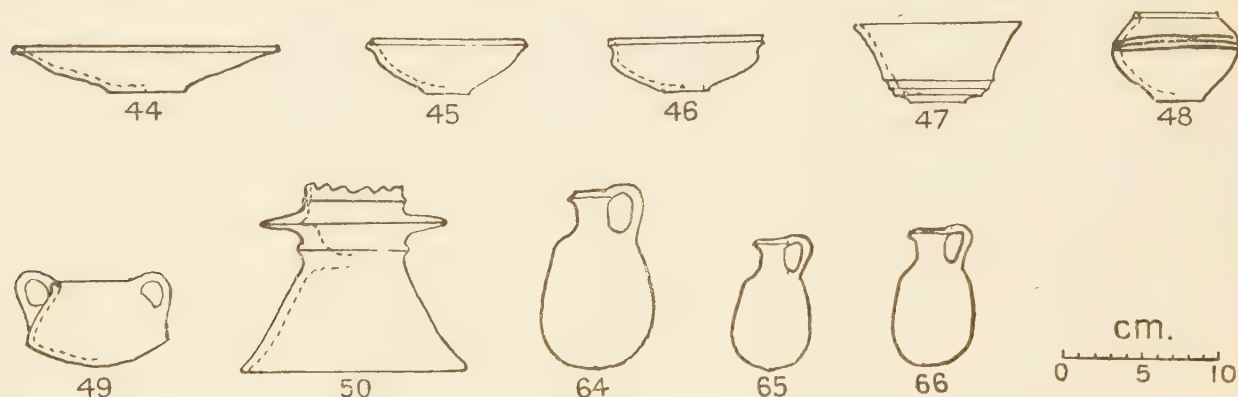
The tomb itself must have been similar to A, though it is now no more than part of a recess in the rock, the further end of which is occupied by two Roman sarcophagi.

¹ See pp. 67 f. and 75-7.

The pottery and sherds were widely scattered, and remains of bone were very few and fragmentary.

Inventory of Finds. Group B

44. Shallow bowl, soft pink ware, grits, pinkish-brown wash inside and part of outside, circular burnish inside. (41. 891.)
 45. Small bowl, brownish ware, grits, traces of brown slip and burnishing inside. (41. 892.)
 46. Small bowl, black ware, black wash, burnished inside and outside. (41. 893.) (Pl. XVIII, 46.)



47. Deep bowl, soft pink ware, red wash and burnish inside and out, ribbed near the base outside. (41. 894.) (Pl. XVIII, 47.)
 48. Small vase, soft pink ware, red wash to within an inch of the base, burnished, black and white bands round centre and traces of black on rim. (41. 896.) (Pl. XVIII, 48.)
 49. Miniature cooking pot, coarse, hard, brown ware, grits. (41. 895.) (Pl. XVIII, 49.)
 50. Base of incense burner (?), decoration on upper face of flange, traces of red wash, but no signs of burnishing. (41. 904.) (Pl. XVIII, 50.)
 51. Jug, the same as 32. 2 exs. (41. 899, 900.) (Pl. XVIII, 51.)
 52. Jug, the same as 36. (41. 901.)
 53. Bowl on three feet, the same as 10. (41. 898.) (Pl. XVIII, 53.)
 54. Jug, the same as 30. (41. 902.) (Pl. XVIII, 54.)
 55-63. Pointed flasks, the same as 21 and 22, various sizes and proportions. (41. 907-15.) (Pl. XVIII, 55-6, 60.)
 64. Small drop-shaped flask, soft pink ware, one handle. (41. 903.) (Pl. XVIII, 64.)
 65. Smaller example of 64. (41. 905.)
 66. Same as 64. Black ware, traces of black wash and burnish. (41. 906.) (Pl. XVIII, 66.)
 67. Bull vase, fine pink ware, pink wash, burnished, body wheel made, head modelled and attached, funnel with strainer in centre of back, spout with strainer below neck, double handle connecting from head to funnel. Tail, horns, eyes, and hooves painted black. (41. 897.) (Pl. XVIII, 67.)
 68. Palette, marble, rectangular, slightly depressed in centre from use. (41. 916.)
 69. Kohl palette, limestone. Circular, with deep central depression. Carinated, with disc base. Rim decorated with concentric circles forming bands, two of which are filled with incised radial and crossed lines, and tiny circles. (41. 917.) (Pl. XVIII, 69.)
 70. Pin, bone, long head, decorated in turning technique, part missing. (41. 918.)

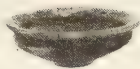
LANKESTER HARDING.



'AMMAN TOMBS
Pottery from Tomb A



41



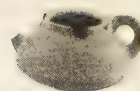
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47



48



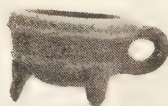
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50



51



53



54



55



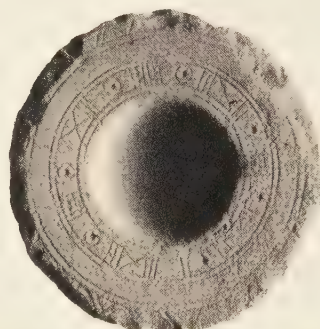
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60



66



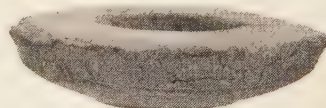
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67

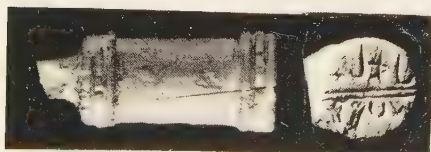
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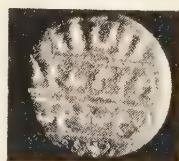
69

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CMS.



42 Ivory Seal

0 1 2
CMS.



Petra Seal



0 1 2
CMS

'AMMAN TOMBS

Nos. 41-2 from Tomb A, Nos. 46-69 from Tomb B

NOTE ON THE POTTERY OF THE 'AMMAN TOMBS

AMONGST the pottery of the two tombs discovered and excavated by Mr. Harding are a certain number of vessels which may be regarded as additions to the Palestinian corpus; a few notes on these pots may be added to Mr. Harding's article.

The two groups have too many features in common¹ not to be considered as one unit; the two intrusive Hellenistic vessels (Nos. 39 and 39A) have, of course, to be disregarded.

The remarkable forms are the following:

Deep Bowl or Pot. (No. 5.) This, with its slight variant No. 48, seems to be related to the Edomite 'jugs' published by Nelson Glueck.² The burnished slip bands on the outside of those 'jugs', overlaid with horizontal lines of black, are apparently similar to our decoration. On the 'Amman bowl, however, instead of being applied in separate bands, the slip spreads uninterrupted over rather more than half the pot, leaving only a zone above the base plain. Furthermore, Glueck makes no mention of white paint, which is a prominent feature of the 'Amman bowls, and as Glueck's bowls are more than twice the diameter of these, the relation between them cannot be proved definitely, especially as Glueck's pots were found without base. The sherds illustrated by Glueck³ certainly look rather different from the 'Amman ware. Nevertheless the resemblance of the outlines of the bowls remains striking.⁴

Carinated Bowl. (No. 7.) Commonplace as this small bowl might seem to be, I failed to find anything even remotely resembling it amongst the types of Palestinian pottery. In fact it is a metal form, and the same flaring rim and round base occur in two bronze bowls of the Persian period from Tell Far'a.⁵

Tripod Cups. Highly burnished. Numbers 10-13 and 53 are variations of one and the same form; it is interesting to find here five examples of what was hitherto considered to be a most uncommon type. The only exact parallel known to me is a tripod bowl of uncertain provenance acquired by the Palestine Archaeological Museum in 1928 (I. 4444).⁶

Lamp. (No. 17.) This differs from the ordinary saucer lamps in having the lip pinched across the middle. The result is an abnormally large spout which not only retains the original curvature of the bowl, but also, unlike any other type of lamp, has a broad flat rim reminiscent of Persian period lamps.⁷ One might perhaps see here a vague connexion with those Hellenistic lamps in which the sides are folded over so as to touch or even overlap.⁸

Pot. (No. 18.) Looks out of place in this context; it reminds one of the Middle Bronze shapes, but of nothing usual in the first millennium B.C.

The Pointed Bottles, Nos. 21, 22, and 55-63, are typologically perhaps the most interesting of

¹ The cooking-pots 27 and 49, the jugs 32 and 51, 30 and 54, the tripod bowls 10 and 53, and above all the pointed bottles 21 f. and 55 ff.

² *Explorations in Eastern Palestine*, II (*AASOR*, XV, 1935), Pl. 24, Nos. 1 and 3; text on p. 131 f.; for No. 48 see Pl. 24, 7.

³ *Op. cit.*, Pl. 28 B, Nos. 27-9.

⁴ Glueck dates his sherds to Iron Age I, which is impossible for the 'Amman bowls. Taking all things into consideration it may be enough to record the similarity without taking it to show more than a local affinity.

⁵ Petrie, *Beth-Pelet*, I, p. 10, para. 30; Pl. XLVII, 817, bottom right (= P.A.M. I. 4431); Pl. XXVIII, 745 and, more remotely, 756. 745 is undated, but 'belongs to a late type', 756 is compared by Petrie with Persian bowls of 650 B.C., a date which he also ascribes to the above-mentioned bowl from tomb 817, cf. p. 14, para. 43.

⁶ For a similar form but with holes below rim, cf. G. M. Crowfoot, 'Some Censer Types from Palestine', in *PEQ*, 1940, pp. 150-3.

⁷ e.g. Johns, *QDAP*, II, Pl. XXXI, No. 820.

⁸ O. R. Sellers, *The Citadel of Beth-Zur*, p. 51, Fig. 41.

the new forms we are discussing. At first they were thought to be connected with the lagynoi and therefore to belong to the Hellenistic intrusion, but in fact it seems possible after all to place them in the Iron II Age.

Handleless pointed bottles though rare are not entirely unknown in Iron II. Some of them, however, are bulkier than ours,¹ others, which resemble the 'Amman bottles more in shape, have either a slightly thickened or a well-pronounced ring-shaped lip.²

Another group of heavy, thick-walled pointed bottles have a more or less crudely modelled lip and are mostly knife-pared.³ The range of these bottles is unusually wide. Their earliest appearance is in Tomb 14 at 'Ain Shems (dated to the sixth century), their last in an unpublished tomb from el-'Ezariye which may go down as far as the second century B.C. This latter group will be quoted as the 'Persian-Hellenistic'.

The 'Amman bottles differ from the Persian-Hellenistic group in nearly every detail, though the shape is almost identical. They are smaller, of fine yellow or red clay, and smoothed to a glossy surface on which only straight horizontal burnish marks are visible. They invariably have a sharp collar-rim, narrowing towards the lip, and horizontal brown bands of varying width and painted at different intervals, very often arranged in pairs. The base is either pointed or provided with a tiny knob. A number of identical bottles, hitherto unpublished, may be listed in the following:

1. Palestine Archaeological Museum No. 38.1205. Presented by the American Colony Stores.
- 2-5. American Colony Stores. From the same group as No. 1.
6. Museum of Jewish Antiquities of the Hebrew University. Found together with a head similar to that from el-Medeiyine in Trans-Jordan.⁴
- 7-9. Palestine Archaeological Museum. From a tomb group bought in 1926 from a Jerusalem dealer. Said to come from 'Amman.⁵

All the above bottles are absolutely identical with those from the 'Amman tombs under discussion, and wherever the context is known it belongs to the Iron Age.

¹ Tell Duweir Tomb 106, Nos. 383, 384, of forthcoming *Lachish III* (384 = P.A.M. 33. 1931). Lamon and Shipton, *Megiddo Strata I-V*, Pls. 9 and 49, Nos. 4, 6, 7: two from Stratum II (650-600 B.C.); one from Stratum I (after 600 B.C.).

² This group comprises the following specimens: (1) The Beth-Zur bottle mentioned by Grant and Wright (note 3 below). (2) A flask brought quite recently to the Palestine Archaeological Museum from el-Jib near Jerusalem, from a tomb in a definitely late Iron Age II context. It is of grey clay, slightly ribbed, and decorated with bands of red and black. (3) A bottle from Samaria (Q. 1400: P.A.M. 32. 3201), of the same ware, horizontally burnished though not ribbed, and painted with plain red bands.

³ This is a list of these bottles:

(1) Tell en-Nasbe Tomb 3: Badè, *Some Tombs of Tell en-Nasbeh*, Pl. XIII, 4 (= P.A.M. I. 4764).

(2) Ophel: *PEF Annual*, IV, 1923-5, p. 178 and Fig. 189.

(3) 'Ain Shems Tomb 14: Grant and Wright, *Ain Shems*, IV, Pl. XLVIII, and *Ain Shems*, V, p. 145 (= P.A.M. I. 5890).

(4) el-'Ezariye (near Jerusalem). Eight specimens: P.A.M. Nos. 37. 301 and 38. 1927-33 (unpublished).

(5) Bethel 1934 Exc., No. 8 = P.A.M. 35. 4416 (unpublished).

(6) An unpublished tomb, now in the Hebrew University with a context corresponding exactly to that of the 'Ain Shems tomb No. 14.

(7) Tell el-Ful: *PEFQSt.*, 1915, Pl. II. Jerusalem, Y.M.C.A. Collection, No. 2725.

⁴ N. Glueck, *Explorations in Eastern Palestine*, I, *AASOR*, XIV, p. 23, Fig. 6. Glueck leaves open the question whether the Moabite head which indirectly dates the bottle at the Hebrew University belongs to Iron Age I or II; but he considers no date outside these two periods.

⁵ The rest of the group consists of a spouted jug like our No. 25 and of a jar with tiny loop handles at the base of the neck, both characteristic of Iron Age II. Cf. W. F. Albright, *The Excavation of Tell Beit Mirsim*, Vol. I, Pl. 66, 18.

NOTE ON THE POTTERY OF THE 'AMMAN TOMBS

In addition two others may be compared which are closely related, and, being painted, seem to fit better into this than into any of the other groups. One is published by Reisner,¹ the other comes from Nineveh.² There is, however, a difference of size which should be mentioned. The 'Amman vases vary from 8.5 to 13.4 cm.; the vase from Samaria, measuring 16 cm., compares well with them, but the one from Nineveh is as much as 26.4 cm. high.

Both these bottles are from Iron Age contexts. Reisner, it is true, calls the Samaria bottle Babylonian-Grecian, but he adds that it was found with Israelite pottery. The Nineveh bottle is more closely dated, viz. to the seventh century B.C.

We thus have three groups of pointed bottles:

1. (a) the bulky form of Iron Age II
(b) the slender form of Iron Age II
2. (a) the 'Amman bottles
(b) bottles from Samaria and Nineveh
3. Persian-Hellenistic bottles.

Groups 2 and 3 are certainly related to each other. To call group 2 Hellenistic would imply that they are imitations of the cruder group 3. This is the opposite of what one would expect, since it is usually the more carefully executed of two related forms which comes first. The sequence must therefore be the other way round, the painted bottles being the prototypes of the others.

To sum up: the evidence for dating the 'Amman bottles is threefold:

- (1) Other examples of the same type have been found in dated contexts.
- (2) Examples of related types are also datable.
- (3) Typologically they are antecedent to the cruder Persian-Hellenistic form.

As all these indications point to Iron Age II, it seems justifiable to connect the pointed bottles of our 'Amman tombs with the bulk of the contents which is Iron Age II, rather than with the two intrusive Hellenistic lagynoi.

Vase. No. 37, is unique both in shape and in decoration.

A *lagynos* and the upper part of another. (Nos. 39 and 39 A.) Lagynoi are jugs used as wine decanters in the Hellenistic world, mainly in the second century B.C. They have a squat and as a rule sharply carinated body, a tall, slender, tapering neck with thickened lip and a long handle varying in section.

Complete or even reconstructable lagynoi seem to be very rare in Palestine. One group may have been imported from Greece or some eastern Hellenistic centre and is distinguished by a dark, hard-fired slip; another group may have been made locally; these have a dull surface, and sometimes horizontal painted bands. Of the first category the present writer knows very few examples; one from Kh. Kerak, now on exhibition in the Palestine Archaeological Museum (P.A.M. No. 37. 992); another from Tell Sandahanna;³ which, however, may or may not belong to the imported category (P.A.M. No. V. 344); and lastly the specimen now in question. Local imitations were equally rare. Bliss and Macalister publish two examples,⁴ and a third fragment is drawn in *Gezer*, III, Pl. CLXXX, 10. The

¹ G. Reisner, *Samaria*, I, p. 288, Fig. 163, text on p. 286, III, 4; II, Pl. 67 h.

² R. Campbell Thompson and M. E. L. Mallowan, 'The British Museum Excavations at Nineveh', 1931-2, in *AAA*, 1933, Pl. LXXIV, 19; p. 175.

³ Bliss and Macalister, *Excavations in Palestine*, Pl. 59, No. 3.

⁴ *Op. cit.*, Pl. 59, Nos. 1 and 2.

'Amman fragment (No. 39 A) is clearly such a local imitation, but except that it is a little smaller it is identical in shape with the imported No. 39.

Lantern, No. 40, is the first pre-Roman lantern to be found in Palestine. Pottery lanterns from the Aegean world are discussed by Pfuhl.¹ In particular he cites a late Minoan domed pot from Hagia Triada, painted with spirals, with a handle on top and rounded opening in front. Unfortunately Pfuhl's reference does not make it possible to trace that lantern, but his description suggests something like the 'Amman piece, though of course there need be no connexion between the two. Otherwise there were only modest pots with an opening ('Lochtöpfe'), from Minoan times onwards. In this part of the world, however, the 'Amman lantern is so far unique. Its ware may be compared with that of a shrine of the same period, also from Trans-Jordan, which was recently acquired by the Palestine Archaeological Museum (No. 40. 286) and is published elsewhere in this issue. J. H. Iliffe draws attention to the fact that the ware and in some ways the shape resemble the Israelite water decanters. The same is true of the lantern. It remains for later finds to confirm the connexion, if any, between the three types: shrine, lantern, and decanter.

Bowl. (No. 46.) Resembles the common type of bowl except for the grey ware and wheel-burnished black slip. Another abnormal feature, suggestive of metal-work, is the grooved sharp-edged rim, contrasting with the usual rounded lip of similar bowls. The ware reminds one of the black dipper juglets, but black bowls seem to be rare on the whole. There are fragments of two from Samaria, but both shape and burnish are different.²

Bowl. (No. 47.) Except for the three deep grooves above the base this is like a type of bowl familiar from Samaria. There, too, stepped bowls occur, but their slip and burnish extend over the steps, whereas here the grooves are reserved. In a way these grooves remind one of Petrie's 'Assyrian ware' from Tell Jemmeh,³ doubtless characteristic of the seventh century. The same date applies to a similar bowl found at Tarsus.⁴

Incense Stand. (No. 50.) Is a peculiar variety hitherto unknown, as is the

Bull Rhyton. (No. 67.) All previously excavated rhyta of this period are of a much cruder workmanship, compared with this carefully burnished and individually shaped vessel. Ware, burnish, and double handle recall the red slip jugs described below on page 79, which most likely originate from Cyprus. Another Cypriote analogy is a figurine of a dancer with a bull's mask in the Cesnola collection.⁵ In this figurine, as in our rhyton, there is a striking contrast, which may not be accidental, between the carefully modelled faces (which incidentally resemble one another) and the stumpy and undifferentiated arms or legs. The same characteristics apply also to a Cypriote goat-vessel.⁶

Date of Tombs

All the parallels quoted point to a late rather than to an early date in Iron Age II, though several types found in these tombs, for example the water decanter and the amphora No. 23, endured through the whole range of Iron II. A late date, too, would agree with the type of the cooking-pot represented by Nos. 27 and 49, which Albright

¹ E. Pfuhl, 'Zur Geschichte der griechischen Lampen und Laternen', in *Jahrbuch des deutschen archäologischen Instituts*, 1912, pp. 57 ff. I have not been able to find the article by Loeschcke quoted by Pfuhl.

² Samaria, Exc. 1935, Q. 4571-3 = P.A.M. 35. 3755 (unpublished).

³ Petrie, *Gerar*, Pl. XLVII, 13, left.

⁴ H. Goldmann, 'Excavations at Gözlü Kule, Tarsus, 1936', in *Amer. Journal of Arch.* XLI, 1937, p. 277 and Fig. 29.

⁵ J. L. Myres, *Handbook of the Cesnola Collection*, p. 340.

⁶ Perrot and Chipiez, *History of Art in Phoenicia and its Dependencies*, II, p. 292, Fig. 225.

would put 'after the end of the VII century'.¹ On the other hand, against placing the whole group without reservation in the seventh century there are certain difficulties connected with the jugs and bowls.

There is a collection of seventeen jugs listed as Nos. 30-6, 51-2, and 54 which, though differing from each other in detail, are nevertheless variations of the same species, characterized by a yellowish ware and a red slip, not always burnished. Of these, Nos. 31 and 32 have a slightly pinched mouth and inturned lip, while Nos. 33 and 34 are furnished with a curiously grooved rim pushed in to form a trefoil spout. Jugs of similar shape come from Megiddo, Strata IV-II,² Samaria,³ and Tell en-Nasbe.⁴ The only exact parallel, No. 30, comes from Tell Duweir.⁵ Nos. 35 and 36 belong to a group previously recognized by C. N. Johns as being of foreign, possibly Cypriote, origin.⁶ These two can be compared to the Cypriote 'Red Slip I (III)' ware,⁷ which corresponds to the 'Red burnished' ware of the Cyprus Museum classification.⁸ All jugs of this type are burnished and sometimes have grooves round the body. A special feature on some of them is a knob-like excrescence of the lip on either side of the handle. Similar knobs occur on the tripod cup No. 11 and on some of the jugs from ez-Zib (see end of note 6).

All the other red jugs from 'Amman seem to be of the 'Plain red' type in the Cyprus Museum Classification.

Now in Cyprus the 'Red burnished' ware ranged from about 800 till 700 B.C. or a little later, whereas the 'Plain red' starts at 750 and continues into the fifth century. As the 'Plain red' cannot be identified with certainty at 'Amman the only evidence for dating the groups is the 'Red burnished' and this does not lead us far beyond 700.

Another problem is that of the bowls. There are altogether fourteen of these. Though the shapes vary, in eleven of them the surface treatment is more or less the same. The slip extends over about two-thirds of the outside of the vessel. On some of the bowls wheel-burnishing is distinctly visible, but only on the outside of the rim, below which it is impossible to make out the direction of the burnish marks. A feature which is peculiar to the bowls of the type No. 3 consists of grooves on the outside of the rim. This seems to replace the normal burnishing—or, on the contrary, may have been meant

¹ *The Excavation of Tell Beit Mirsim*, I, p. 81, Pl. 55: 2, 4, 5, 7, 9, and Pl. 56: 1-3, 10, 11.

² Lamon and Shipton, *Megiddo Strata I-V*, Pls. 3 and 45, Nos. 83-8.

³ C 502 = P.A.M. 32. 2418.

⁴ Tomb 32: No. 1907.

⁵ No. 465. Tomb 109. No. 233 in forthcoming *Lachish*, III.

⁶ *QDAP*, VI, p. 142, Fig. 6, 1; text p. 141, with note 7. In Palestine they are not very frequent and it may be worth trying to give a list, however incomplete:

Megiddo Strata I-V, Pls. 3 and 45, Nos. 83-6 (an even closer parallel with a tall neck from the 1936 excavations: a-833 = P.A.M. 36. 1956 unpublished).

Tell Duweir, Nos. 237, 244, 246, of forthcoming *Lachish*, III.

Tell en-Nasbe, No. 1103 = P.A.M. I. 58 (unpublished).

'Athlit, *QDAP*, VI, p. 142, Fig. 6, 1.

ez-Zib (from a recently excavated Phoenician cemetery north of Acre); jugs with the same knob-like excrescences.

⁷ *Swedish Cyprus Expedition*, II, Pl. CXXVI, 1-4, but particularly No. 4.

⁸ J. du Plat Taylor and V. Seton-Williams, *Classification of Pottery in the Cyprus Museum*, pp. 27 and 46 (mimeographed).

as a more emphatic application of outside burnishing. According to Albright wheel-burnishing was not used after 800 B.C.¹

On the other hand, our wheel-burnish differs slightly from the broad even marks of Tell Beit Mirsim on which Albright chiefly bases his theory. The solution may be that ours is a debased form of the regular Tell Beit Mirsim technique in that it extends only as far as the rim and is even then clearly distinguishable only in two cases.

At the present stage of our knowledge we can suggest only two possible datings. Either the two tombs remained in use for about two centuries (800–600 B.C.) or the group as a whole belongs to the end of the seventh century, and the exceptions have somehow survived. The latter theory appeals more to the writer since both groups give the impression of a homogeneous whole.

We may perhaps note here the possibility that some of the vessels represented in the two tombs are of specifically Trans-Jordanian types: (1) A comparatively large proportion of the shapes are hitherto unknown in Palestine; (2) The same finish and scheme of colouring in particular is common to a great number of the vessels; moreover they resemble, both in shape and in the decorative system, sherds which are known to be characteristic of Trans-Jordan, though they may belong to different periods; (3) Every one of the pointed bottles of group 2*a* whose provenance is well established comes from Trans-Jordan.

There are, it is true, several connexions which point to Cyprus, and some of the pots are of a general Palestinian character. We may, however, say that this pottery as a whole brings us a step nearer to forming an idea of Ammonite pottery in Iron Age II.

E. HENSCHEL-SIMON.

¹ *The Excavation of Tell Beit Mirsim*, I, p. 86.

SEALS FROM 'AMMAN AND PETRA

1. Seal from 'Amman (P.A.M. No. 41. 889) (Pl. XVIII, 42)

THIS seal was found in a tomb near 'Amman, described on pp. 67 ff. of the current number. It is of ivory, in the form of a cylindrical rod, 31 mm. long, with a projecting triple ridge at each end. The top, now broken, probably ended in a loop and is decorated with radiating grooves. After the legend, which is discussed below, is what looks to be a roughly engraved lotus-flower.

The legend on the seal is apparently שַׁע | לַאֲלַת 'belonging to 'ēl-tiša'.

The script is similar to that found on the Hebrew seals of the Israelite period, *circa* eighth century B.C., and the seal may therefore be confidently assigned to approximately the same period; but the fact that, while the first ל is correctly engraved, the second is inverted suggests an ignorance or a lack of skill on the part of the engraver that may be due either to an earlier rather than a later date around or within the proposed epoch or to unfamiliarity with writing on the part of one working at some distance from the most advanced centres of contemporary civilization.

The owner's name, if rightly transcribed, may conceivably be אֱלִישַׁע (if the fourth letter is a badly made י) or perhaps rather אֱלִתְשַׁע, which may be read either as אֱלִתְשַׁע or perhaps as אֱלִתְשַׁע;¹ in either case it can be explained only after a consideration also of the Ammonite אֱלִשַׁע² and the Hebrew אֱלִישַׁע which may represent either אֱלִישַׁע or אֱלִישַׁע (v. *infr.*). The Hebrew יִשְׁעִיָּה (י) and the Judaeo-Aramaic יִשְׁעִיָּה too come into the picture. A comparison of these various forms shows that the only possible root which fits them all is יִשַׁע, whether in a perfect or an imperfect (jussive) or imperative form, and this must be explained in the light of the Arabic وَسِعَ 'was broad, ample, wide, capacious; was generous', as applied to God in such expressions as اَللّٰهُمَّ سَعِّ عَلَيْنَا 'O God, be generous unto us'.³ Thus יִשְׁעִיָּה (י) and יִשְׁעִיָּה will mean respectively 'Yāh' and 'ēl is generous', while אֱלִשַׁע will mean 'O 'ēl, be generous'; and אֱלִישַׁע may be אֱלִישַׁע 'my God, be generous' or אֱלִישַׁע 'may God be generous'. Accordingly אֱלִתְשַׁע will mean 'O 'ēl, mayst thou be generous', or, though not perhaps with so much probability, 'may 'ēlāt⁴ be generous'.⁵ The sense thus won for these

¹ In this case the single writing of the double *t* (s. Driver in *JEA* XXV 1764) may be justified by a comparison of such names as the Hebrew יִרְבֶּעַל which ought perhaps to be read *יִרְבֶּעַל = יִרְבַּעַל (Noth), and the Phoen. יִשְׁבַּעַל which may be read as *יִשְׁבַּעַל = יִשְׁבַּעַל (Buhl); but it must also be borne in mind that the god here may be not the well-known בעַל but rather the recently recovered עַל (Nyberg), when they will mean respectively 'may 'al be strong' and 'may 'al return'.

² Diringer *Le iscrizioni antico-ebraiche palestinesi*, 253¹.

³ Cp. Old-Babylonian *ili-ešuh* and Proto-Arabic 'l-yṯ'.

⁴ Cp. Greek, Ἀλιάτ, whose worship Herodotus (*Hist.* III. 8) ascribes to the Arabs. Further, it is known that אֱלַת was a goddess not only of the Phoenicians but also of the Nabataeans and Palmyrenes who were akin to the Arabs and close neighbours of, if not strictly contemporary with, the Ammonites.

⁵ The literal sense of the $\sqrt{y}$ appears again (i) in a good sense in הוֹשִׁיעָה יְמִינִךָ 'make wide thy hand' = 'be unstinting in help' (Ps. lx. 7; cviii. 7) and (ii) in a bad sense in מְבוֹא בַדְמִים וְהוֹשַׁע יָדְךָ לָךְ 'from coming to bloodshed and making wide thy hand for thyself' (1 Sam. xxv. 26) and מְבוֹא בַדְמִים וְהוֹשַׁע יָדִי לִי 'from coming to bloodshed and making my hand wide for myself' (ibid. 33), where the reference is to David's self-restraint in not opening his hands wide to grasp or help himself liberally to Nabal's property. (s. 'Journal of Theological Studies' XLIII 157, XLIV 20.)

names is analogous to that of רַחֲבָה 'Yāh is wide, liberal' and רַחֲבָם 'āṁ is wide, liberal'.¹

Both אֱלֶשׁ and אֱלֶתֶשׁ are interesting also for their form. First, it is rare for Hebrew names to have the divine element preceding an imperative element; it is perhaps unique in so far as the Massoretic vocalization is accepted. Apparently the only other possible instance is אֱלֶדְעָה which ought assuredly to be read as *אֱלֶדְעָה (= אֱלֶדְעָה) 'O 'ēl, know (me)'; and it is important to remark that this name has Old-Arabic affinities (Noth). These names are thus seen to be parallel formations to the Old-Arabic 'lws 'O 'l, give' and similar names.² Names of this type too are common enough in Accadian nomenclature. Second, the use of the singular second person of a finite verb after the divine element, though extremely rare, is not unparalleled, being found also in Judaeo-Aramaic ביתאלתדן 'O Bêth'ēl, mayst thou judge' and ביתאלתקם 'O Bêth'ēl, mayst thou arise'. The explanations therefore of אֱלֶשׁ and אֱלֶתֶשׁ here proposed are both of them defensible on the established principles of Semitic onomatology.

This seal, then, if it is actually of Ammonite workmanship and ownership, confirms by its evidence the worship of אֱל and argues in the use of the simple theme of יִשׁע the close connexion of the Ammonites on the one side with the Hebraeo-Aramaean stock of the Northern Kingdom and on the other side with the pseudo-Aramaean Nabataean and Palmyrene and the early Arab peoples.

2. Seal from Petra (P.A.M. No. 40. 451) (Pl. XVIII)

This seal, which was bought at Petra in 1940 for the Department of Antiquities of Trans-Jordan, is cut from a reddish stone and is circular in shape with a slightly domed back; in the registers above and below the inscription is some ornamental pattern of uncertain design.

The legend on it appears to be עבדיבעל | לבעוראל 'belonging to Bē-'ēzer-'ēl son of 'Abdī-ba'al'.

The script lies between that of the Moabite Stone (as shown by ב, ד) and that of the inscription from Têma in Arabia (as shown by א, ד, ל, ע, ר), thus suggesting a date between the ninth and sixth/fifth centuries B.C.

Both names, if rightly read, are new and call for brief comment. The first, meaning 'by the help of 'l', is of the rare type found in only a few other Semitic proper names, such as the Accadian *Ina-šilli-Bēl* 'in the shadow of Bel', the Phoenician בידאל 'in the hand of 'ēl' and the Hebrew בְּסוּדָּה 'in the counsel of Yāh' and בְּצִלָּאֵל 'in the shadow of 'ēl' as well as the proto-Arabic (Safaite) *Bsm'l* 'in the name of 'l'.³ The second, meaning 'slave of Ba'al', preserves the old ending of the construct state and is parallel to the Hebrew עַבְדֵּי־אֱל 'slave of 'ēl'. Both names then are of types known to have been borne by Hebrews but may equally well be of Edomite origin, for all that is known of the nomenclature of Edom; if then the seal is Edomite, it attests the worship of אֱל and בעל by that people.

G. R. DRIVER.

¹ Cp. Mishnaic Hebrew רַחַב 'generous, liberal' (Noth *Personennamen* 193). Of course in יִשְׁעִיה (ו) and יִשְׁעֵאל the first element may be in the imperfect (jussive) tense.

² Beside 'ws'l; cp. y'ws'l with the verb in the imperfect tense.

³ Ryckmans, *Noms propres sud-sémitiques* I 239.

A HOARD OF TYRIAN AND JEWISH SHEKELS.¹

SOME years ago Sir George Hill² described a find of Tyrian and Jewish shekels. On the assumption that both series came from one hoard, the author regarded them as additional evidence for his dating of the Jewish shekels to the First Revolt. Both Jewish and Tyrian shekels were indeed offered for sale at about the same time, but it is more than doubtful whether they were actually found together.³ The dating of these coins being the 'crux' of Jewish numismatics, any new evidence with regard to this problem is of special interest.

The pyxis and coins described here were acquired by me in October 1940. Here again unhappily no strictly archaeological evidence is available, but there is no reason to doubt the statement of the dealer that the pyxis containing the coins was actually found at or near Silwan, the ancient Siloah. It may be mentioned in this connexion that neither the peasant, who sold the pyxis to the dealer, nor the latter himself attached any great monetary value to the pyxis itself. Most of the Tyrian coins, and two of the shekels, show the same kind of green patina as the interior of the pyxis. When bought, this was partly covered with the yellowish-brown loam characteristic of the hill-side near Jerusalem. When acquiring pyxis and coins I was told by the dealer that he had already sold some well-preserved shekels of the same find. These shekels, as I later ascertained, all belonged to year 2.

The *pyxis* (Pl. XIX) is of bronze and has acquired a beautiful greenish-blue patina. Its diameter is 7.5 cm., and its height including the lid is 9 cm. The cover of the pyxis has a pierced handle. The workmanship is excellent, and the cover fits perfectly, which probably accounts for the good preservation of the coins. The pyxis rests on a moulded ring base at the circumference, and the bottom is reinforced by a sort of metal stud riveted to the centre.⁴

Pottery pyxides similar to ours, i.e. with concave sides and lid provided with a knob, were common in Greece in the sixth⁵ and fifth⁶ centuries B.C. and their origin is said to go back to the Geometric period.⁷ Pyxides made of various materials were in use in the Roman, Byzantine, and even Umayyad periods. In Roman times they were made of horn, ivory, tin, lead, silver, or gold; Pliny⁸ in particular mentions pyxides made of bronze. Their use was to hold medicines, toilet articles, or valuables; sometimes even poison, as we learn from Josephus.⁹ The latter reference is important as it shows that in the period we are dealing with the Jews were well acquainted with the type. Whether

¹ The hoard is on exhibition in the Palestine Archaeological Museum by special arrangement with the author.

² *QDAP*, Vol. VI, pp. 78-83.

³ A. Reifenberg, *Ancient Jewish Coins*, Jerusalem, 1936, pp. 20-1 = *JPOS*, Vol. XIX, 1939-40, pp. 289-9.

⁴ The pyxis has to me all the appearance of a standard Hellenistic-Roman piece. Handle, concave sides, marks of turning, stud below, and mouldings are characteristic. Parallels may be found from Herculaneum, &c., at Naples. Cf. a Hellenistic silver engraved pyxis, Daremberg-Saglio, *Dictionnaire*, fig. 1178, s.v. *Capsa*. [J.H.I.]

⁵ H. Payne, *Necrocorinthia*, p. 332.

⁶ G. Richter, *Shapes and Names of Athenian Vases*, figs. 137-45.

⁷ *B.M. Cat. of Vases*, III, p. 17.

⁸ *Hist. Nat.* XXVIII. 18. 76.

⁹ *Ant.* XVII. 4. 2 (77) and *Bj.* I. 30. 7 (598).

or not the present pyxis is to be attributed to Jewish workmanship is hard to decide. The absence of any figured ornament such as is commonly found on Roman bronze vessels of the period at least makes it possible that we have before us a local product.

Shekels of Tyre (Pl. XIX, 1-9)

Of the period 126/125 B.C. to A.D. 69/70. (*Brit. Mus. Cat., Phoenicia*, pp. 233-53.)

Obv. Bust of Melqarth r.

Rev. Eagle standing l. on beak of ship. Palm branch over shoulder; in field l. date and club; between legs of eagle a Phoenician letter; in field r. monogram or letters; around from r. downwards inscr. ΤΥΡΟΥ ΙΕΡΑΣ ΚΑΙ ΑΣΥΛΟΥ.

Some of the coins are so worn that date and monogram are illegible. Because of the difficulty of reproducing the monograms in type they are not given here.

1. Date 114 (?) = 13/12 B.C. Monogram illegible. 14.05 gm. Much worn. Green patina.
2. Date 143 = A.D. 17/18. On r. KP over monogram similar to *BMC*, No. 199, of year A.D. 18/19. (Cf. Rouvier, 'Numismatique des villes de la Phénicie', in Svoronos' *Journal International d'Archéologie Numismatique*, 1903, No. 2101.) Between legs 'aleph'. 14.09 gm. Worn. Green patina.
3. Date 146 = A.D. 20/21. On r. KP over monogram, similar to *BMC*, No. 236. Between legs 'bet'. 14.10 gm. Worn.
4. Date 165 = A.D. 39/40. On r. KP over monogram. (Cf. Rouvier, *op. cit.*, No. 2112.) 14.15 gm. Very much worn. Green patina.
5. Date 172 = A.D. 46/47. On r. KP over monogram. Between legs 'aleph'. (Cf. Rouvier, *op. cit.*, No. 2117, and *BMC*, Nos. 207-8; but with different monograms.) 14.13 gm. Slightly worn. Green patina.
6. Date 180 = A.D. 54/55. On r. KP over monogram, similar to *BMC*, Nos. 210-12. 14.24 gm. Fairly well preserved. Seems to be unpublished.
7. Date 190 = A.D. 64/65. On r. $\begin{smallmatrix} KP \\ CA \end{smallmatrix}$. Somewhat barbarous style. 14.14 gm. Very fair. Unpublished.
- 8 and 9. Date and most details illegible. Very much worn. 14.16 and 14.28 gm., respectively.

Hebrew Shekels (Pl. XIX, 10-12)

Obv. Chalice; around Hebrew inscription 'Shekel of Israel'; above the chalice date.

Rev. Stem with three conventionalized flowers; around Hebrew inscription 'Jerusalem the Holy'.

10. Date 1. Same obv. die as Reifenberg, *op. cit.*, No. 137. 14.10 gm. Very slightly worn.
- 11 and 12. Date 2. Both reverses of same die. Both coins very little worn and very fair. Weight of both coins 14.30 gm. each. Green patina, especially strong on No. 11.

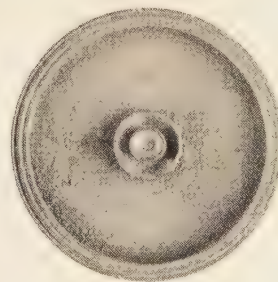
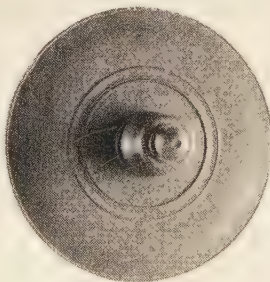
The range of the Tyrian shekels in this hoard, from 13/12 B.C. to A.D. 64/65, is consistent with Josephus' reference to Tyrian money current in Palestine at the time of the First Revolt.¹

In view of the excellent state of preservation of the Jewish shekels and the improbability of any coin remaining in circulation for two centuries, the shekels cannot date from the Maccabean period. It is therefore evident that they belong to the First Revolt. The hitherto unpublished Tyrian shekel No. 7 proves that the issue of full shekels did not

¹ B $\check{J}$. II. 21. 2 (592).



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C/Ms

A HOARD OF TYRIAN AND JEWISH SHEKELS

A HOARD OF TYRIAN AND JEWISH SHEKELS

stop in A.D. 56.¹ The almost mint condition of this Tyrian shekel, and of the Jewish shekels of the year 2 (A.D. 67/68), proves that the coins were deposited shortly after the issue of the latter. Since no shekels of year 3 (A.D. 68/69) were found, it is safe to assume that the pyxis containing the coins was hidden in A.D. 67/68, about two years before the destruction of Jerusalem.

A. REIFENBERG.

JERUSALEM,

December 1941.

¹ *BMC, Phoenicia*, p. 249, No. 211.

COIN HOARDS FROM PALESTINE, II

1. *A Hoard of Silver Coins of Sidon and Alexander from Khirbet el-Kerak*

THE hoard is alleged to have been found in 1936 at Khirbet el-Kerak, a large tell on the southern shore of the Lake of Galilee, and from there to have found its way in dribbles to the markets of Tiberias. The exact circumstances of the discovery are not known, and the pot in which the coins are said to have been found proves to be of Israelite date. The Department of Antiquities has succeeded in acquiring 64 double-shekels of Sidon, 40 tetradrachms of Alexander and 13 of Philip Arrhidaeus, and 1 didrachm of Tyre, the last being probably intrusive. These 118 coins, however, form only a part of the hoard, and it is known that a considerable number of other specimens are missing.

The coins were probably buried not long after 319 B.C. They cover the reigns of Alexander and Philip as well as the decade immediately preceding the fall of Sidon into Alexander's hands, as the double-shekels bear the names of the last two kings of Sidon, Euagoras II and Straton II, and of Mazaeus, the Persian satrap.

The coins were found coated with a hard, thin, purplish patina which peeled off easily. They have now been cleaned in the museum laboratory. The coins of Sidon are extremely worn, probably from use, and must have been in constant circulation. On the other hand, the tetradrachms of Alexander and Philip are, with a few exceptions, in very good condition. They come from at least eleven different mints spread all over Alexander's dominions,¹ from Greece to Babylon, though the mint at Babylon accounts for no less than half the number of coins in our possession, including all the coins of Philip.

The hoard is noteworthy, being the first of its kind known to have been discovered in Palestine.

DESCRIPTIVE LIST

Double-shekels of Sidon

Obv. War-galley 1. with oars, row of shields along bulwarks, small armed figure as figure-head, and curved ornament over poop supporting globe-and-crescent standard (stem round); below, quadruple zigzag line of waves; above, date; border of dots.

Rev. The King of Persia in a car drawn by three horses driven by charioteer who holds reins in both hands. The King wears kidaris and kandys; behind the car, an attendant wearing low head-dress and robe, holding in r. sceptre with animal's head, in l. vase with flowers; double exergual line; in field above, inscription, border of dots; traces of incuse circle. (*BMC, Phoenicia*, pp. 150-3.)

EUAGORAS II

No.	Weight in grammes	Size in mm.	Date	Rev. legend	Remarks
1	23.79	28	1	00	..
2	25.10	28	1	„	..
3	25.53	28	1	„	..

¹ The attributions to mints have been made in the light of Mr. Newell's recent researches.

COIN HOARDS FROM PALESTINE, II

No.	Weight in grammes	Size in mm.	Date	Rev. legend	Remarks
4	25.32	29	I	OO	..
5	24.96	28	I	"	..
6	24.63	30	III	"	..
7	22.64	27	III	"	Star above poop. (Pl. XX, 1.)
8	25.57	29	III	"	..
9	25.03	28	III	"	..
10	25.51	29	III	"	Car drawn by four horses, and attendant wears conical cap and short skirt. (Pl. XX, 2.)
11	24.21	28	Obliterated	"	..
12	24.60	27	"	"	..
13	25.06	26	"	"	..
14	24.52	29	"	"	Star above poop.
15	25.35	30	"	"	..
16	25.12	28	"	"	..
17	25.21	29	"	"	..
18	24.93	26	"	"	..
19	25.52	30	"	"	..
20	24.51	29	"	"	..
21	24.93	29	"	"	..
22	24.80	27	"	"	..

STRATON II

23	25.21	27	I	SO	..
24	24.99	28	I	"	..
25	24.74	27	I	"	..
26	24.32	28	I	"	..
27	24.86	28	I	"	..
28	24.83	29	I	"	..
29	25.64	29	I	"	..
30	25.28	28	I	"	..
31	25.50	30	II	"	..
32	24.19	29	III III	"	(Pl. XX, 3.)
33	25.02	27	Obliterated	"	..
34	24.00	29	"	"	..
35	25.38	27	"	"	..

MAZAEUS

36	25.45	29	139	1413	(Pl. XX, 4.) Dated by years of Artaxerxes Ochus.
37	25.21	27	19	Obliterated	Dated by years of Darius III.
38	23.64	30	Obliterated	14..	..
39	24.59	30	"	1413	..
40	24.88	30	"	"	..
41	24.87	28	"	"	..
42	23.96	28	"	"	..

KING'S NAME OBLITERATED

43	24.52	30	I	Obliterated	Euagoras II or Straton II.
44	25.08	27	I	"	"
45	24.70	27	I	"	"
46	25.04	28	I	"	"

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No.	Weight in grammes	Size in mm.	Date	Rev. legend	Remarks
47	23.69	28	I	Obliterated	Euagoras II or Straton II.
48	25.84	28	I	"	"
49	23.96	27	I	"	"
50	24.98	29	I	"	"
51	25.51	28	I	(?) O	"
52	25.20	28	I	Obliterated	"
53	24.09	28	III	"	"
54	25.61	30	III	(?) O	"
55	24.80	27	Obliterated	Obliterated	"
56	21.20	27	"	"	Mazaeus (?).
57	22.63	27	"	"	"
58	23.68	28	"	"	Attendant wearing conical head-dress and short skirt.
59	24.20	28	"	"	Ditto.
60	24.77	31	"	"	..
61	25.25	27	"	"	..
62	22.50	27	"	"	..
63	21.87	29	"	"	..
64	24.35	28	"	"	..

Tetradrachms of Alexander and Philip

Obv. Head of young Herakles in lion-skin r. Border of dots.

Rev. Zeus seated on throne l., holding eagle in r. and resting l. on sceptre. Legend:

- A ΑΛΕΞΑΝΔΡΟΥ, or
- B ΑΛΕΞΑΝΔΡΟΥ ΒΑΣΙΛΕΩΣ, or
- C ΒΑΣΙΛΕΩΣ ΑΛΕΞΑΝΔΡΟΥ, or
- D ΒΑΣΙΛΕΩΣ (in ex.) ΑΛΕΞΑΝΔΡΟΥ, or
- E ΒΑΣΙΛΕΩΣ ΦΙΛΙΠΠΟΥ

Border of dots.

AMPHIPOLIS

No.	Weight in grammes	Size in mm.	Legend	In field	
65	16.98	25	A	Bunch of grapes	
66	17.12	24	B	Bow and quiver	
67	16.90	27	B	Pallas Promachos	
68	16.84	26	C	Phrygian cap	
69	15.09	26	C	"	
70	17.17	26	C		(Pl. XX, 5)
71	14.96	26	C	Crescent r.	

SICYON

72	16.69	25	A	Naked youth with out-stretched arms
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SIDE OR PHASELIS

73	16.73	26	D		Beneath throne 
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COIN HOARDS FROM PALESTINE, II

No.	Weight in grammes	Size in mm.	Legend	TARSUS	In field	Beneath throne	
74	16.95	28	A				
75	16.65	25	A		Plough		Behind Zeus • (Pl. XX, 6)
76	15.68	27	A		”	Θ	Behind Zeus •
77	15.75	28	A		”	Θ	” •
KITIUM							
78	16.72	28	D			Κ	
MYRIANDROS							
79	15.85	27	A			Μ	(Pl. XX, 7)
80	15.71	26	A			”	”
DAMASCUS							
81	13.55	27	A		Ram	Δ A	
ARADUS							
82	14.67	26	D		?	⚡	
83	16.28	26	D		Caduceus	”	(Pl. XX, 8)
SIDON							
84	16.81	27	A		Σ	Σ I	
85	17.03	29	A		K	”	
86	14.58	26	A		N	”	
ACRE							
87	16.92	25	A		Υ		(Pl. XX, 9)
88	14.99	28	A		Υ		
89	12.97	24	A		Υ		
90	15.26	26	A		Υ		
BABYLON							
91	16.91	26	A		Star	⚡	
92	17.12	26	A		Kylix and M	⚡	(Pl. XX, 10)
93	16.82	25	A		Bee and M	”	(Pl. XX, 11)
94	16.95	26	A		Thunderbolt and M	”	
95	16.52	26	D		M	”	
96	16.84	27	D		(?) M	”	
97	16.29	27	D		(?) M	”	
98	15.59	25	D		(?) M	”	
99	16.93	27	D		M	ΛΥ	
100	16.87	28	D		M	”	
101	16.89	28	D		M	”	
102	16.19	27	D		M	”	
103	17.09	27	D		M	”	
104	17.05	26	E		M	”	(Pl. XX, 12)
105	16.39	27	E		M	”	
106	16.87	27	E		M	”	
107	16.94	28	E		M	”	
108	16.86	26	E		M	”	

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<i>No.</i>	<i>Weight in grammes</i>	<i>Size in mm.</i>	<i>Legend</i>	<i>In field</i>	<i>Beneath throne</i>
109	15.42	25	E	M	ΛΥ
110	17.04	26	E	M	”
111	16.19	26	E	M	”
112	17.00	26	E	M	”
113	16.76	26	E	M	”
114	16.26	27	E	M	”
115	15.96	27	E	M	”
116	16.00	28	E	M	”

UNKNOWN

117	14.57	25	A	?
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Tyre

Obv. Melqarth riding r. on hippocamp with curled wing; in r. reins; in l. strung bow; below, two lines of waves and dolphin r.; cable border.

Rev. Owl standing r., head facing; over l. shoulder, crook and flail; in field r., *𐤌𐤍*; cable border. (*BMC, Phoenicia*, p. 232, No. 40.)

118 8.64 gm. 19 mm.

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COIN HOARDS FROM PALESTINE, II
Silver coins from Kh. El-Jarak



MODEL SHRINE OF PHOENICIAN STYLE

A MODEL SHRINE OF PHOENICIAN STYLE

Description: Model shrine. Pottery. Iron II Age.

0.235 = Ht. $\times$ 0.210 $\times$ 0.180 m.

Palestine Archaeological Museum No. 40.286.

The body is barrel-shaped, and resembles a carinated Israelite jug, but closed above and having a knob on top for a handle. The ware is coarse, of a brownish tinge with grey-blue core, and has a reddish-brown slip. One side has been cut away to form an entrance, which is flanked to left and right by a partly engaged column with double volute capitals; the upper volutes turn inwards, the lower (as usual) outwards. These two columns support a high, flat, and undecorated frieze or tympanum, approximately rectangular in shape. This has been cut away below in the centre for the insertion of a bird with spread wings. The whole façade leans slightly backwards, and the upper left-hand corner of the tympanum has been broken away. A small hole has been bored through the wall of the shrine, a little to the left of the back centre, some time after baking.

The capitals belong to the series of volute capitals associated with the spread of Phoenician art, and seen (in Palestine) on the ivories from Samaria, a bronze tripod and stands from Beisan and Megiddo, the capitals from Samaria and Megiddo, and elsewhere.

The model shrine described above and illustrated in Pl. XXI was purchased recently by the Palestine Archaeological Museum. Little reliance can be placed on the alleged provenance, i.e. 'Trans-Jordan'; nevertheless, it clearly belongs to the cultural area of ancient Syria-Palestine, and that it was found somewhere in one of those countries may readily be accepted. Two pottery vessels of a typically Palestinian kind were reported to have been found with it, a cup-shaped colander or strainer, painted with brown and black strokes on the rim, and a tiny, burnished cream-coloured juglet with horizontal rings in black. All three can be dated to Iron Age II, and the earlier half of that period, perhaps to about the tenth/ninth centuries B.C. They belong to that increasing group of objects called 'Phoenician'.

The piece is not to be classed amongst the group of hut-urns for containing the ashes of the dead. It is clearly a receptacle for use in the cult of the god or goddess, probably Astarte, e.g. for the insertion of some offering.

The interest which this shrine has for us is of three kinds: religious, architectural, and ceramic. Although of an entirely novel form, it belongs to a group of religious furniture of the First to Second Iron Ages which has been excavated for the most part at Beisan and Megiddo, and some of which are in the Palestine Archaeological Museum.¹ This furniture includes pottery shrines and offering stands, which sometimes partake of one another's characteristics. Common to both are triangular openings like windows, and they are often decorated with snakes, doves, lions, or other animals. Another one of a unique form found at Taanach² and dated to about 700 B.C., like one of the Megiddo shrines, had human-headed sphinxes. Such shrines have a long history, going back at least to the early third millennium in Mesopotamia. The present shrine is seen to be

¹ Beisan: Palestine Archaeological Museum Nos. P. 1803, P. 1804. Cf. A. Rowe, *Museum Journal* (Philadelphia), XVII (1926), pp. 294-9.

Megiddo: Palestine Archaeological Museum No. 1.4447. Cf. May and Engberg, *Material Remains of the Megiddo Cult* (Oriental Institute Publications, Univ. of Chicago, vol. XXVI), Pls. XIII-XV, pp. 13 sqq., for discussion.

² Cf. reff. in May and Engberg, *op. cit.*, p. 15, n. 38.

connected with the above-cited Palestinian group by the dove with spread wings seated above the entrance. The technique also of the other examples is closely akin to that of the present, including the rather primitive modelling, even to the manner of representing the eye of the dove by a tiny flat disk of clay *appliqué*, as is visible in the photograph, Pl. XXI. The dove was closely connected with the cult of Astarte, and the triangular openings of dovecotes or the doves themselves frequently occur on incense and offering stands as well as on pottery shrines of the present class.

Architecturally our shrine is interesting because it gives us another early occurrence of the proto-Ionic volute capitals, which have been found at Megiddo,¹ Samaria, and elsewhere, and representations of which are used decoratively on many small *objets d'art*, such as the Phoenician ivories from various sites, e.g. Nineveh, Arslan Tash, and Samaria, and the bronze tripods and stands found in many parts of the Eastern Mediterranean region, from Olympia to Beisan. Such volutes also occur on the pottery shrines found at Megiddo.² Our specimen, however, is not the usual simple double volute, curling outwards from a central trunk like the branches of the palm-tree from which it is supposed to be copied. It has these usual features, but above there is a second story, as it were, consisting of two volutes like the first, but turned inwards towards one another at the top of the curve. If the lower volutes were inverted, they would make exactly the upper ones. It would seem as if we had here that stage of evolution before the palm-tree motif had crystallized inevitably into the form which it eventually took as the Ionic capital; when the idea of using it at the top of a column had suggested itself, but the final stylized form was still the subject of experiment. That is, if we may take this model shrine as reflecting to any extent the contemporary trends in architecture, which seems justifiable. A further indication that the volutes are decorative and not yet structural members is perhaps to be seen in the fact that they are *appliqués* and not double-sided or free-standing, a feature which they share with those on the Megiddo shrines and the above-mentioned stone capitals from Megiddo and Samaria.³ We can see the architect still at the stage of trying out various patterns based upon his observation of the palm-tree. It will be noticed also that the columns forming the façade of the shrine, and standing as it were *in antis*, are connected about half-way up with the walls by a thick supporting bar.

Ceramically the shrine is related in form to the familiar Israelite water-jugs with carinated shoulder and ridge on the neck at the junction with the handle. It suggests an early form of these, having a more pronounced bulge in the side. The knob on top is also peculiar to the shrine, to serve as a handle. As the jugs in question can be assigned to about the ninth to seventh centuries B.C., it would seem that we have here further evidence for dating the shrine to a period during or slightly before the ninth century, i.e. about the commencement of the *floruit* of these jugs.

The circumstance that this shrine was bought from a dealer serves by contrast to bring into relief the additional importance attaching to the majority of Palestinian antiquities with which we have to do, in that they have been found in regular excavations and their exact provenance is known.

J. H. ILIFFE.

¹ Cf. May and Engberg, *loc. cit.*, Pls. X–XI, and pp. 6–11.

² May and Engberg, *loc. cit.*, Pls. XIII, XIV.

³ May and Engberg, *loc. cit.*, Pls. X–XI, and pp. 6–11.

PALESTINIAN ALABASTER VASES¹

ANCIENT Egypt was the home of stone vessels in general and of alabaster vases in particular. The manufacture of vases in hard stone began in the predynastic age, roughly at the same time as the black-topped pottery dated S.D. 30,² and it reached a level of perfection unknown in other cultures. But as early as the first dynasties the use of such hard stones as diorite, porphyry, and breccia began to give way to such softer materials as serpentine and more especially alabaster. By the fourth dynasty alabaster was far more widely used than any other stone.³ Henceforth alabaster vessels played a prominent part in ritual and in everyday life.

With the growth of Egyptian influence, and with the development of international communications, alabaster vases found their way into the neighbouring countries: Palestine, Syria, Cyprus, Crete, Greece, and even Mesopotamia. The oldest Egyptian alabaster vessels hitherto discovered in Palestine belong to the Early Bronze period (twenty-seventh to twenty-sixth centuries B.C.). They are a group of bowls from et-Tell ('Ai).⁴ But this early appearance of Egyptian alabaster in Palestine is so far unique. Importation on a large scale started in the Middle Bronze II period with a quantity of standard types which occur again and again on most excavated sites; during the Late Bronze Age importation from Egypt continued, though a certain decline is noticeable towards the end of the period.⁵ With the coming of the Iron Age there is a sudden drop in the importation of alabaster vases. What may be called a revival sets in with the outgoing Israelite period and continues into Persian and Hellenistic times; but this revival is to all intents and purposes limited to one well-known type, the 'alabastron', on which see below, page 109.

The great quantity of alabaster vases of Egyptian origin found in Palestine in almost every excavation, and especially on sites in which Egyptian cultural influence was predominant, has given rise to a widespread belief that *every* alabaster vase found in Palestine is necessarily of Egyptian manufacture. This current opinion was summed up by Galling,⁶ who stated recently that 'curiously enough, neither Syria nor Palestine developed

¹ Abbreviations:

AAA = *Annals of Archaeology and Anthropology*, University of Liverpool.

P.A.M. = Palestine Archaeological Museum.

Steingefässe = W. von Bissing, *Steingefässe*, Vienne, 1907 (Cat. Gén. du Musée du Caire).

Stone Vases = W. M. F. Petrie, *Stone and Metal Vases*, London, 1937.

² Cf. the diagrams in W. M. F. Petrie, *Diospolis Parva*, Pls. II, III.

³ According to G. Reisner, *Mycerinus*, p. 180, about 57 per cent. of all stone vessels found in the Valley Temple of Mycerinus were made of alabaster. In private tombs of the fourth dynasty alabaster was the only stone used, cf. H. Junker, *Giza*, I, p. 109.

⁴ Published by Mme Marquet-Krause in *Syria*, Vol. XVI (1935), p. 333. See also the discussions on dating by Albright in *JPOS*, Vol. XV (1935), pp. 209-10; and Wright, *The Pottery of Palestine from the Earliest Times to the end of the Early Bronze Age*, p. 76.

⁵ Cf. K. Galling, *Biblisches Reallexikon*, 1937, s.v. *Alabaster*, for a summary article with references and drawings of types. It should, however, be pointed out that Galling's type 8 really belongs to Middle Bronze II, and that the most common type of the Late Bronze, the kohl pot, is not shown. For the latter cf., e.g., Petrie, *Ancient Gaza*, IV, Pl. XXXVIII, 38-40, 47-8.

⁶ *Op. cit.*, col. 7.

an alabaster industry of their own'. He explained the existence of forms peculiar to Syria by suggesting that they may have been made by local craftsmen out of blocks imported from Egypt. Other archaeologists have simply assumed without question that all alabaster vases are of Egyptian origin. As far as I am aware, Petrie is the only one who has hinted¹ at a 'Syrian' origin for some of the vases found by him in southern Palestine. It is the object of this note to draw attention to the fact that the manufacture of so-called alabaster vases actually took place in Palestine. It was confined, it is true, to limited periods, and probably to a few centres of manufacture. The material used was a local stone of different composition.

These conclusions were first suggested to the writer by the existence in Palestine of a number of alabaster vessels the shapes of which are peculiar and cannot be paralleled in Egypt. This study is based on the limited number of these which are available at the Palestine Archaeological Museum,² and have been at the writer's disposal for close examination and chemical analysis.

The Material

The Egyptian alabaster familiar to every archaeologist in the Near East is a translucent stone, whitish to pale yellow in colour, and often with bands of darker or lighter shades. The local alabaster, on the other hand, is usually of a chalky consistency, and is pure white. There is a marked difference in its external appearance, and after handling a few examples it is possible to tell at a glance whether a vase is made of local or of Egyptian material.

Another difference easily established lies in the relative hardness of the stones. The local alabaster is quite soft, its index of hardness being 2, i.e. it can be scratched with the finger-nail, whereas the index for the Egyptian is 3 to 3.5. The local stone is therefore much more susceptible to the action of humidity and of atmospheric changes. In consequence the surface of the locally produced vases is often corroded to such a degree as to obliterate the original outline of the vessel. On the other hand, there are cases where atmospheric factors have actually increased the density of the grain; in such instances the surface shows a buff patina, and is much harder and more resistant than the stone taken direct from the quarry.

Palestinian alabaster when pure is absolutely white, but it often contains an admixture of bituminous substances which either gives the stone an even light-grey colour, or else takes the form of grey veins which increase the resemblance to Egyptian alabaster. The Palestinian stone-workers were apparently at great pains to select pure white blocks for their work, as practically all the vases examined are of a white stone which, though present, is rare in modern quarries.

But the most reliable criterion for distinguishing the Egyptian from the Palestinian alabaster is its chemical composition. Whereas Egyptian alabaster is calcite (calcium carbonate), the Palestinian variety is really gypsum (calcium sulphate). The term

¹ e.g. *Ancient Gaza*, I, p. 8.

² My thanks are due to the Director of the Pennsylvania University Museum, Philadelphia, to Mr. G. M. FitzGerald, and to Professor J. Garstang for kind permission to publish the vases from the excavations of Beth-Shan and Jericho, and to use some drawings contained in the field registers. The drawings throughout this paper are the work of Mr. N. Avigad, of the Hebrew University, Jerusalem.

'alabaster' is in fact applied quite loosely to two chemically and mineralogically distinct materials.¹ This vagueness in the use of the term coupled with the superficial similarity of the two minerals has naturally helped to create a certain confusion. For example some vases from Tell Far'a are described in one context as gypsum, in another as calcite.² A *tazza* from Jericho (P.A.M. No. 32. 1078) made of local alabaster is described as 'rock crystal'.³ In the publications of the 'Ain Shems excavations the term 'gypsum alabaster' is applied indifferently to Egyptian calcite and to Palestinian gypsum.⁴ The bowls from 'Ai are explicitly declared to be 'gypsum, not calcite',⁵ whereas in fact an analysis made in the Palestine Archaeological Museum has proved that they are of calcium carbonate, that is, calcite. The excavators at Megiddo give the correct definition 'Egyptian alabaster-calcite',⁶ but also apply the term to vases which are undoubtedly of Palestinian gypsum.⁷

As for the geographical distribution of the two minerals, we have to bear in mind that banded calcite is confined solely to Egypt, and that no such worked deposits have been so far recorded in any other country in the Near East. A calcite vase found in Palestine may therefore safely be attributed to Egyptian origin, whereas a gypsum vase has every likelihood of being a local product;⁸ but the test of the material has of course to be corroborated by the evidence of style and technique.

Palestinian alabaster or gypsum occurs in the Jordan Valley and in the neighbourhood of the Dead Sea, especially round the Lisan, at Jebel Usdum, near Ras ez-Zuweira, and in the valley of Wadi Hesa.⁹ Both on topographical and mineralogical grounds it is unlikely that the Dead Sea region was the source of supply for the ancient industry. The deposits there, in a country devoid of roads, are too far from the centres of civilization in the Middle and Late Bronze ages,¹⁰ and the gypsum found in these regions has a dark colouring due to admixture of bituminous substances.

¹ See *Encyclopaedia Britannica*, 13th ed., s.v. *Alabaster*, 'a name applied to two distinct mineral substances, the one a hydrous sulphate of lime and the other a carbonate of lime'.

² *Beth-Pelet*, II, the vases on Pl. XLVIII, 13, 20 are described on p. 23 and on the plate as gypsum, while in the tomb register on Pl. XCI they are called calcite.

³ Garstang, in *AAA*, Vol. XX (1933), description of Pl. XVI, 8.

⁴ E. Grant, *Rumeileh*, p. 91, index, s.v. *Alabaster*.

⁵ W. F. A. Albright, in *JPOS*, Vol. XV (1935), p. 210, n. 47, quoting the opinion of Sir Flinders Petrie.

⁶ Guy and Engberg, *Megiddo Tombs*, p. 6.

⁷ Cf. *op. cit.*, description of Pl. 130, Nos. 13, 14, and below, p. 107, No. F3.

⁸ That gypsum vases were made in Egypt during the Old Kingdom is shown by a workshop with unfinished specimens and working tools discovered by Miss G. Caton-Thompson at Um-es-Sawan in the Fayum (cf. *The Desert Fayum*, Vol. I, pp. 103-15). But the industry shows no further development, and from the end of the Old Kingdom onwards, i.e. from the time when commercial relations with Palestine start on a larger scale, practically all alabaster vases were made of calcite. Vases of gypsum become extremely rare, and I am told by Mr. A. Lucas, who analysed most of the vases in the Cairo Museum, that they may virtually be disregarded. A few exceptions are listed in A. Lucas, *Ancient Egyptian Materials and Industries*, p. 365.

⁹ According to an oral communication from Mr. L. Harding there is a quarry near the upper course of Wadi Hesa which is purported to contain traces of ancient quarrying. On the deposits at Wadi el Hesa cf. Abel, *Géographie de la Palestine*, I, p. 199, and G. S. Blake, *The Mineral Resources of Palestine*, p. 37.

¹⁰ The recent explorations of N. Glueck have shown that there was no sedentary population in Trans-Jordan between the Early Bronze and Early Iron Ages. Cf. *Explorations in Eastern Palestine*, III (*Annual of the Amer. Schools of Or. Res.* XVIII-XX), p. 268.

On the other hand, the deposits of the Jordan Valley contain layers of white gypsum identical in appearance with the stone used for the Palestinian alabaster vases. It seems therefore reasonable to connect these deposits with Beth-Shan and Jericho, the chief centres of distribution of Palestinian alabaster vessels, and situated one about the middle and the other at the end of the Jordan Valley. The main deposits are about 18 km. to the north of Beth-Shan, near the modern bridge of Jisr Delhamiye, and just behind the Jewish settlement of Milhamiya (Menahamiya).¹ They are now being worked for the cement industry at Haifa. The stone is not homogeneous in quality. Some layers are of a perfectly transparent stone which flakes too easily to be suitable for vases; others are grey in colour and contain impurities, but some layers produce a milky-white stone which resembles in all details the material of the vessels described in this paper.

Dr. M. Avnimelech of the Geological Department of the Hebrew University has kindly examined a few of the vases from Beth-Shan (unfinished juglet No. A3, juglet No. A11, and small jar No. C2) and compared them with lumps from the Milhamiya quarry. He found a striking similarity between the Beth-Shan vases and the Milhamiya stone both in morphological structure and in the size and density of the grains. He also polished a lump from Milhamiya and obtained a surface hardly distinguishable in colour and in general appearance from that of the ancient vessels found at Beth-Shan.

A quantitative analysis of a juglet from Beth-Shan, No. A3, and of two chunks picked up at Milhamiya, made by Mr. J. H. Haleblan, Chemist in the Department of Antiquities,² shows the following results:

	Juglet No. A3 per cent.	Chunk of gypsum, I per cent.	Chunk of gypsum, II per cent.
Silica (SiO ₂)	traces	0.40	0.08
Iron and aluminium (Fe ₂ O ₃ and Al ₂ O ₃)	0.32	0.32	0.76
Calcium sulphate (CaSO ₄)	78.47	77.51	76.95
Calcium carbonate (CaCO ₃)	nil	traces	0.45
Loss on ignition	21.00	21.00	21.08
	99.79	99.23	99.32

Thus it seems reasonably certain that the quarries of Milhamiya supplied the material for the alabaster industry of Beth-Shan.

The Technique

The first step of the craftsman was to give the alabaster block the rough outline of the vessel he intended to make. At this stage the neck and body were roughly outlined and the future handle, if any, indicated by a large lump left at the appropriate place (cf. Nos. A1, A4, A5). The neck and body were then shaped from the outside and the hollowing of the interior began. The handle was still left unpierced, probably in order not to expose it to danger of breaking while the inside was being worked (cf. No. A2).

The process of hollowing out the inside of the vessel in the Palestinian industry was

¹ G. S. Blake, *Geology and Water Resources of Palestine*, p. 23; and Abel, *loc. cit.*, pp. 199–200.

² I have also to thank Mr. Haleblan for making qualitative analyses of those vessels described throughout this paper which are in the Palestine Archaeological Museum.

entirely different from that which is known to have obtained in ancient Egypt. The Egyptians used stone borers or tubular drills of reed or copper,¹ and workmen engaged in drilling stone vases are often to be seen on Egyptian reliefs.² The marks which can be observed on existing stone vases confirm the process depicted on the reliefs; they often clearly show the stump left by the tubular drill, or the horizontal lines left by the rotating stone borer (Pl. XXIII, 9). These marks are, however, not always visible because the interior was usually well polished after drilling.

In Palestine, although the stone borer seems to have been known in the Middle Bronze Age,³ it was not used in the working of alabaster. All the vases examined show signs of having been hollowed out to the required depth with the chisel. As the chiselling was of course done from top to bottom, the chisel marks are vertical, i.e. parallel to the axis of the vase (Pl. XXIII, 8), in contrast with those of the Egyptian drill, which if at all visible are horizontal (Pl. XXIII, 9). The vertical chisel marks form a distinctive feature of the Palestinian vases and may serve as an additional criterion for distinguishing them from the imported pieces.⁴ The only Palestinian vases which do not show any chisel marks on the inside are the open *tazze*, the interior of which was meant to be seen and was therefore smoothed carefully, with the result that the tool-marks are no longer visible.

The last stage in the manufacture consisted in grinding down the outside of the vessel and in polishing the surface. In Egypt special care was taken in this final process,⁵ which resulted in an extremely smooth and glossy surface. The Palestinian craftsman showed less skill in the finish of his stone vessels, the surface was left in a much coarser state, and the marks of the polishing tools are sometimes visible. In addition, it is to be borne in mind that the Egyptian material is harder and lends itself better to a smooth surface treatment.

These details can best be observed in a group of unfinished juglets which were found in the excavations at Beth-Shan in 1931.⁶

Unfinished Juglets from Beth-Shan

Al. Unfinished juglet in an early stage of working. The shape is barely outlined, the neck is only slightly differentiated from the body. No attempt at hollowing out the interior has yet

¹ For discussions of processes of drilling of Egyptian stone vases see *Steingefässe*, pp. i-v; G. Reisner, *The Early Dynastic Cemeteries of Naga-ed-Dér*, Part I, p. 105 and Fig. 197, with a diagram showing the use of borers of various sizes employed in the hollowing out of the same vase; A. Bonnet, *Ein frühgeschichtliches Gräberfeld bei Abusir*, 1928, pp. 10 ff.; G. Reisner, *Mycerinus*, pp. 130, 179-80.

² e.g. N. de G. Davies, *The Rock Tombs of Deir el Gebrâwi I*, Pl. XIII. Other examples are given in L. Klebs, *Die Reliefs des Alten Reiches*, pp. 83-4; idem, *Die Reliefs und Malereien des Mittleren Reiches*, p. 107; and H. Balcz, 'Die Gefäßdarstellungen des Alten Reiches', in *Mitteilungen des deutschen Inst. f. ägypt. Altertums-kunde in Kairo*, Vol. III (1932), p. 85.

³ As attested, e.g., by an unfinished mace-head of limestone, bored from both ends. (P.A.M. No. 32. 73, from Beth-Shan, unpublished.)

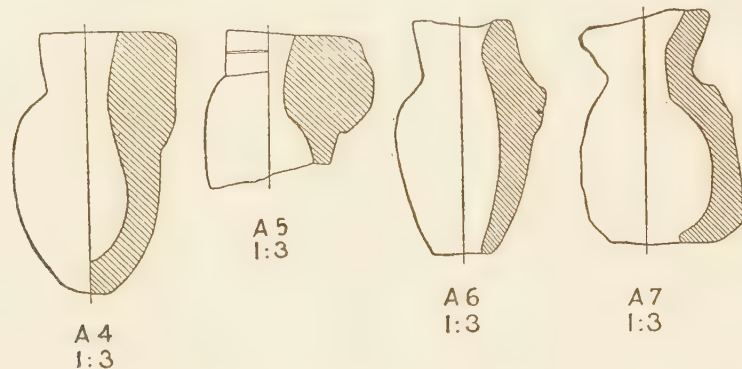
⁴ The drill was occasionally dispensed with even in Egypt, but then mainly in bowls or wide-necked vases. Cf. e.g. *Steingefässe*, Nos. 18378 and 18435.

⁵ Cf. the relief showing a workman polishing a stone vase in A. Scharff, *Die archäologischen Ergebnisse des vorge-schichtlichen Gräberfeldes von Abusir-el-Meleq*, Fig. 17. It is assumed by Sir Flinders Petrie that the polishing was sometimes carried out while the vase was being rotated on a lathe (cf. *The Pyramids and Temples of Gizeh*, p. 176).

⁶ Referred to by FitzGerald in *PEF QSt.* 1932, p. 147.

been made. Waster left unfinished because a chunk chiselled off at the back carried away too much of the shoulder of the intended juglet. Level XB, Room 1659. (P.A.M. No. 32. 67.) Pl. XXIII, 5.

- A2. Upper part of an unfinished juglet in a more advanced stage than the foregoing. The general outline is nearly completed, the neck is divided by a sharp line from the shoulder, the interior has been hollowed out, but the handle is still unpierced. Level XB, Room 1655. (P.A.M. No. 32. 58.) Pl. XXIII, 6.
- A3. Unfinished juglet still further advanced. After the interior had been completely hollowed out the handle (now broken off) was pierced. Abandoned because too large a flake came off at the attempt to remove a lump on the outside of the body, thus leaving a hole in the wall. Level XB, Room 1661. (P.A.M. No. 32. 46.) Pl. XXIII, 7.



- A4. Unfinished juglet abandoned at same stage as A2. Level XB, Street 1658, exc. No. 31-12-35. (Not in P.A.M.)
- A5. Upper part of an unfinished juglet, as A4. Level XA, Room 1611, exc. No. 31-10-316. (Not in P.A.M.)
- A6. Unfinished juglet, abandoned owing to the fact that a chunk removed from the interior carried part of the bottom away with it, thus rendering the vessel unsuitable for use. Level XA, Room 1617, exc. No. 31-10-393. (Not in P.A.M.)
- A7. Waster, abandoned for the same reason as the foregoing. Level XA, Room 1626, exc. No. 31-10-351. (Not in P.A.M.)

Two further unfinished juglets of which no drawings are extant are mentioned in the field register of the 1931 excavations; they are:

- A8. No. 31-11-84, found in Room 1656 of Level XB.
- A9. No. 31-11-95, found below the 'Tuthmosis III' temple, i.e. below Level IX.

It is significant that eight unfinished juglets out of a total of nine recorded were found in several rooms situated within an area of no more than 16×20 m.¹ As waste pieces would not be carried away but rather discarded on the spot, we seem to have here the site of a workshop of local alabaster. The rooms in question belong to two phases of Level X, and we may therefore assume that the workshop existed in the same neighbourhood throughout the period extending over XA and XB.

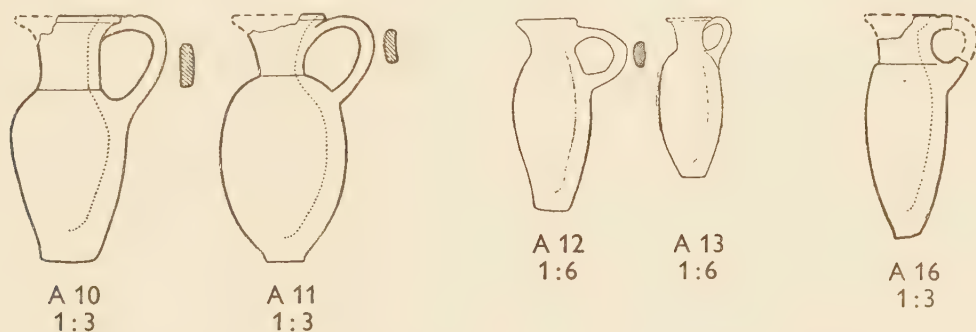
¹ The exact provenance of juglet No. 9 is not indicated in the excavator's register.

The Forms

The local industry of alabaster cannot compete with that of Egypt in richness and variety of form. The extant vases fall readily into the following types.

A. Juglets

The Palestinian juglets seem to show the attempts of the native stone worker to create shapes of his own, regardless of Egyptian models. This may account for the fact that among a dozen juglets recorded from Beth-Shan and Jericho there are hardly two showing the same outline. The only characteristic common to all Palestinian juglets is the negative one that they are unlike those made of Egyptian alabaster.¹ The Egyptian juglets are much more uniform in shape and balanced in outline. The body is slender and tapers regularly from top to bottom (cf. Pl. XXII, 1). The top of the handle is flush with the rim, while the handle of the Palestinian juglet usually starts below the lip, as if added separately; in this it approaches more nearly to the handle of the pottery dipper which was, no doubt, its prototype. A further difference lies in the section of the handle which is round in the Egyptian juglets while those from Palestine usually have a flat handle, occasionally concave on the outside.



A 10. Juglet of white gypsum with light yellow patina on outside. Part of rim broken away. Broad strap handle with two parallel lines incised on top. Chisel marks visible on inside. Outside smoothed all over, except on base, which was left partly rough. From Beth-Shan, Level XA, Room 1625. (P.A.M. No. 32. 31.) Pl. XXII, 9.

A 11. Juglet with slightly perceptible disc base. Strap handle, concave on outside. Material and patina as No. A 10. Fine irregular marks of polishing tool visible on outside. From Beth-Shan, 'filling below Tuthmosis III Level', i.e. below Level IX. (P.A.M. No. 32. 41.) Pl. XXII, 5.

A 12. Large juglet. Two grooves along outside of handle. From Beth-Shan, Level XA, Rooms 1633-4, exc. No. 31-11-220. (Not in P.A.M.)

A 13. Juglet with strap handle, concave on outside, cf. above No. A 11. From Beth-Shan, unstratified area at the edge of the tell; exc. No. 33-11-418. (Not in P.A.M.)

A 14. Juglet with flat strap handle. Surface partly corroded. Tool marks visible on inside. From Jericho, Tomb 9. Garstang, in *AAA*, Vol. XIX, Pl. XXX, 13. (P.A.M. No. 32. 1533.)

¹ Such as: Petrie, *Ancient Gaza*, IV, Pl. XXXIX, Nos. 51-3, 58 (with pointed base), 66, 67 (with small flat base); Guy and Engberg, *Megiddo Tombs*, Fig. 184, 9 (with flat base).

- A15. Juglet with stump of handle remaining. From Jericho, Tomb 9. Garstang, in *AAA*, Vol. XIX, Pl. XXX, 15. (Not in P.A.M.)
- A16. Juglet with concave neck set off sharply from shoulder. Flattish handle (broken) with incised line on top. Surface partly corroded. Tool-marks visible inside neck. From Jericho, Tomb 31, exc. No. 268. (P.A.M. No. 33. 1215.)
- A17. Tall juglet. Neck and upper part of handle missing. Much corroded surface. Tool-marks visible on inside. From Jericho, Tomb 43, exc. No. 480. (P.A.M. No. 35. 1705.)
- A18. Parts of a juglet with small flat base. Much corroded inside and out. Too fragmentary for drawing. From Jericho, Tomb 43, exc. No. 491. (P.A.M. No. 35. 1710.)

To the above list may be added the following three juglets which to judge from their non-Egyptian form are of Palestinian manufacture.

- A19. Juglet with handle ending below in four finger-shaped attachments. Petrie, *Beth-Pelet*, I, Pl. XI, 66, from Tomb 569. (Not in P.A.M.) Although no pottery was found in this tomb it may be safely dated to the Middle Bronze II period by the ivory inlays, *ib.*, No. 68 and by the scarabs drawn on Pl. XII, Nos. 120-4.
- A20. Juglet with rim and handle broken, a stump of the latter remaining. Petrie, *op. cit.*, Pl. XI, 81, from the Middle Bronze II tomb No. 564. (Not in P.A.M.)
- A21. Juglet with handle broken and restored in drawing. Grant, *Beth-Shemesh*, p. 125; from the Middle Bronze II tomb No. 3. (Not in P.A.M.)

Nearly all juglets of Palestinian alabaster belong to the Middle Bronze II period. This date may be derived from the contents of the tombs or strata in which they were found. Juglets A14-A21 come from well-dated tombs at Jericho, Tell Far'a, and Beth-Shemesh; while Nos. A1-A8, A10, and A12 are from Levels XB and XA of Beth-Shan. With regard to XB there is no doubt that it belongs to the Hyksos period, but the Late Bronze date tentatively assigned to Level XA by G. E. Wright¹ has in my opinion to be modified. Wright's dating is based on the provisional description by G. M. FitzGerald who compares some characteristic sherds of this level with the Late Bronze pottery of Levels IX-VII (Tuthmosis III-Amenophis III).² But though it cannot be denied that Level XA contains a certain amount of characteristic Late Bronze pottery, it is nevertheless a fact that the bulk of the objects of Level XA belong to Middle Bronze II. This may be gathered from representative pieces in the Palestine Archaeological Museum and from a careful perusal of the excavators' registers for the 1931 season. The relevant areas are those in which the alabaster juglets were recorded, e.g. rooms 1617, 1619, 1625-7, and 1633-4. They are found to contain Tell el Yahudiyeh juglets, bowls on looped feet, carinated bowls of characteristic Middle Bronze II form, a fragment of a cooking-pot with rope decoration in relief, &c.³

Granting that Level XA was not entirely homogeneous, yet it seems clear that the 'alabaster area' at least, including the workshop mentioned above (page 98), should be dated to Middle Bronze II. This conclusion is confirmed by FitzGerald's statement that 'some of the buildings of Level XA, if not all, may . . . belong to the Hyksos period',⁴

¹ *AJA*, XLV (1941), p. 485.

² Cf. his preliminary report in *PEF QSt.* 1932, p. 146.

³ G. Shipton arrives at similar conclusions with regard to the dating of level XA of Beth-Shan in his *Notes on the Megiddo Pottery of Strata VI-XX*, p. 50, Para. 168.

⁴ *Loc. cit.*

and especially by his mention of 'a considerable intrusion of Hyksos pottery from Levels X, XA and XB'.¹ Pending the final report of the excavator it seems reasonable to date the above-mentioned juglets from Beth-Shan to the Middle Bronze II period.

Juglets A9 and A11 may be dated later than the others as they were found 'below the Tuthmosis III level', i.e. in the 'layer of debris about a metre deep' between Levels IX and XA. This layer probably represents the debris of the Late Bronze I period.

B. Baggy-shaped Vases

The ordinary Egyptian 'baggy' vases² represent the commonest of the types introduced into Palestine during the Middle Bronze II period³ (cf. Pl. XXII, 4). It seems that this form was particularly convenient for the transport of perfumes, owing to the fact that the neck is quite narrow in relation to the body and thus can easily be closed with a stopper or with a piece of cloth tied over the mouth. Although no statistical data are available, it appears from the published material that the type is more frequent in Palestine than in Egypt, and it is therefore suggested that the baggy vases were manufactured in Egypt not so much for the local market as for export.

In support of this suggestion the following fact may be noted. The majority of the Egyptian baggy-shaped vases found in Palestine are not circular but oval in plan. This is a feature which is confined to Palestine, as was pointed out by Albright in his thorough discussion of this type of alabaster vase. A scrutiny of the collection in the Egyptian Museum at Cairo which the writer made in January 1941⁴ revealed the surprising fact that the Egyptian vases of this type, while identical in outline with the examples found in Palestine, are all circular in plan. The baggy-shaped vases with oval plan are extremely rare in Egypt.⁵ If the suggestion that the baggy-shaped vases were manufactured in Egypt mainly for export be correct, it would explain the fact that those found in Palestine are oval in section. The oval shape was obviously more convenient for export as such vases could be packed closer and with less danger of breakage.

With regard to the baggy-shaped vases of Palestinian origin, it may be pointed out that their number is naturally quite small in view of the large supply from Egypt. The few specimens which prove to have been made in Palestine closely follow the Egyptian models in general form and are of Middle Bronze II date. Their main difference from the Egyptian lies in the sharp angle between the side and the base, which in the Egyptian specimens is rounded off.

B1. Body in the form of a truncated cone. Slightly convex base. Circular in plan. From Beth-Shan, Level XB, below Rooms 1601-9. (P.A.M. No. 32. 55.) Pl. XXII, 8.

B2. Oval in plan in imitation of the imported Egyptian vases. Circular depression on inside of

¹ *PEF QSt.*, 1934, p. 131.

² *Steingefässe*, Pl. III, Nos. 18297, 18300, 18309, &c., and *Stone Vases*, Pl. XXIX, Nos. 606-7.

³ For a detailed discussion of the subject cf. W. F. Albright, *The Excavation of Tell Beit Mirsim*, Vol. I, pp. 28-9.

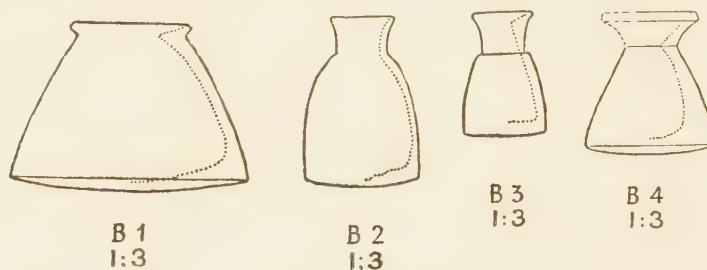
⁴ I have to thank the Directeur Général, l'Abbé Drioton, and the Associate Curator, Mr. G. Brunton, for their great kindness in permitting me to study the vases in question in spite of the conditions then prevailing.

⁵ W. M. F. Petrie and G. Brunton, *Sedment*, I, Pl. XLI, No. 33; and G. Brunton and R. Engelbach, *Gurob*, Pl. XXII, No. 46.

I. BEN-DOR

bottom. Outer surface corroded. Tool-marks show up on inside. From Jericho, Tomb 3, exc. No. 44. (P.A.M. No. 32. 1049.)

- B3. Incomplete. Slight step at base of shoulder. Almost circular in plan. Surface partly corroded. Tool marks on inside. From Jericho, Tomb 31, exc. No. 219. (P.A.M. No. 33. 1165.)



- B4. Assigned to the Palestinian group on the strength of the angular outline, although the material could not be analysed. From Beth-Shan, north of Room 1619, thus apparently Level XA, exc. No. 31-11-12B. (Not in P.A.M.) With it was found an egg-shaped faience vase of Middle Bronze II date.

C. Small Jars

The origin of these jars (Pl. XXII, 6, 10) is to be sought in the Egyptian forms of the Middle Kingdom.¹ But while the section of most of the Egyptian vases does not follow the outer outline and has the inside bored in a straight line,² the Palestinian vessels are made according to a different technique, which aims at widening the inside of the vessel to correspond with the contour of the outer surface.

This type of vase was frequently imported from Egypt during the Middle Bronze II period.³ The Palestinian vases approach the Egyptian models, some to a greater and others to a lesser degree. Nos. C1-4, for instance, have rounded shoulders closely resembling the Egyptian, but the sharp shoulders of the remainder are peculiar to Palestine. Another difference consists in the rim, which is flat-topped in the Egyptian and flaring or concave in the Palestinian examples.⁴ The former shape is better adapted to the material and belongs to the old Egyptian tradition of stone working; the latter displays a technique that still adheres to the more familiar tradition of the native pottery industry. All the Palestinian vases belonging to this class come either from Beth-Shan or from Jericho and are well dated by their pottery context to the Middle Bronze II period.

- C1. Neck broken off. Rounded shoulder. Traces of tool marks visible on inside. From Beth-Shan. Found inside mud-brick walls of Level XB. (P.A.M. No. 34. 1283.)

- C2. Neck broken off. Rounded shoulder. Tool marks visible on inside. From Beth-Shan, Level XI, Room 1815 in pit. (P.A.M. No. 34. 985.)

¹ Pl. XXII, 2; *Steingefässe*, Pl. II, Nos. 18144-5; *Stone Vases*, Pl. XXIX, 650-2, 654; Garstang, *El Arabah*, Pl. X, E236, right.

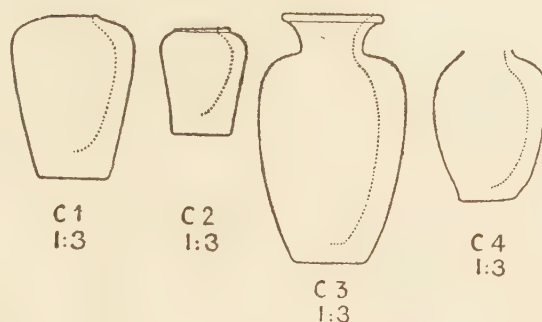
² *Stone Vases*, Pl. XXVIII, Nos. 584-93.

³ e.g. *Beth Pelet*, II, Pl. XLIII, 31; Petrie, *Ancient Gaza*, I, Pl. XXV, 27-8; *Ancient Gaza*, IV, Pl. XXXIX, 65, 68.

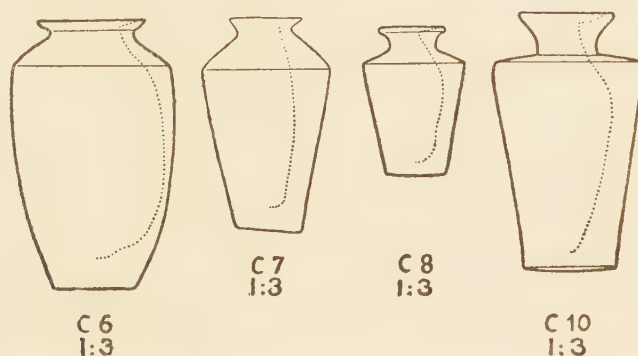
⁴ An exception to be noted is No. C 8 from Jericho.

PALESTINIAN ALABASTER VASES

- C3. Rounded shoulder. From Beth-Shan, Level XI, Room 1919, exc. No. 33-11-501a. (Not in P.A.M.)



- C4. From Beth-Shan, Level XB, Room 1660, exc. No. 31-11-80. (Not in P.A.M.)
 C5. Oval in plan. Sharp rim and steep shoulder. Slightly concave base. Tool-marks visible on inside. From Beth-Shan, Level XII, Room 1965. (P.A.M. No. 34. 1385.) Pl. XXII, 6.
 C6. Restored from fragments. Form, size, and technique as above. Same provenance. (P.A.M. No. 34. 1386.)
 C7. Steep shoulder. From Beth-Shan, Level XI, Room 1919, exc. No. 33-11-501 b. (Not in P.A.M.)



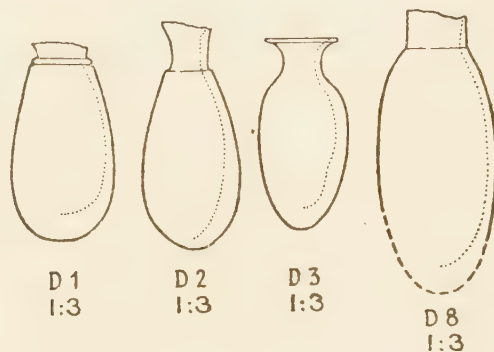
- C8. Flat rim. Sharp shoulder. Sides slightly concave. From Jericho. Tomb 9, Level *e* (not published with the other objects from this tomb). (P.A.M. No. 32. 1467/1.)
 C9. Flaring neck. Sharp shoulder. Slightly concave sides. Convex base. From Beth-Shan, Burial in Room 1822, Level XI. (P.A.M. No. 34. 1010.) Pl. XXII, 10.
 C10. Concave neck. Flat shoulder. Slightly concave sides. Convex base. Tool-marks visible on inside. Provenance as above. (P.A.M. No. 34. 1009.)
 C11. Part of small jar (not drawn). Shoulder and neck missing. The tool-marks show that a chisel ca. 5 mm. broad was used for hollowing out the vessel. From Jericho, Tomb 9, Level *e*. (P.A.M. No. 32. 1467/2.)

D. Ovoid Flasks

This class comprises small egg-shaped vases, without handles, varying in height from 8 to c. 12 cm. The largest diameter lies at about one-third of their height from the bottom; from this point the body tapers gently towards the neck and more abruptly towards the base, which is obtuse. The neck flares upwards in a straight line and ends at the top in a simple thin rim. All examples except one of this class now in the Palestine Archaeological Museum come from the excavations at Jericho. This fact would seem

to indicate a local style developed on that particular site. The ovoid flasks can be dated definitely to the Middle Bronze II period as they all come either from Tomb 9 excavated in 1932 and published in *A.A.A.*, Vol. XIX (1932), pp. 43 ff., or from Tomb 31 excavated in 1933. The latter is as yet unpublished, but its date appears from the objects now in the Palestine Archaeological Museum and from others described or depicted in the excavator's registers.

For possible Egyptian prototypes to these ovoid vases one may refer to the well-known ovoid alabaster vases (Pl. XXII, 3) occurring in Egypt from the XIIth dynasty onwards¹ which were imported into Palestine and Syria during the Middle Bronze II period.² The Egyptian vases have a profiled neck with ridges on the outside, which, as Sir Arthur Evans has pointed out, may well have been derived from a neck made of rings of fibre fitted on an ostrich egg.³



(Nos. D1-7 are from Jericho.)

- D1. Projecting ridge at base of neck reminiscent of the Egyptian ovoid jars from which this class is probably derived. Material partly light yellow, partly pure white. Oblique chisel marks visible inside. Tomb 31, exc. No. 284. (P.A.M. No. 33. 1230.)
- D2. Neck stepped in. Tomb 31, exc. No. 217 *bis*. Found inside a pottery goblet. (P.A.M. No. 33. 1163.) Pl. XXII, 7.
- D3. Neck forms a curved line with the shoulder. Badly corroded on outside. Traces of tool-marks visible on inside. Provenance as above, exc. No. 266. (P.A.M. No. 33. 1213.)
- D4. Ovoid vase, in fragments, cf. photograph of one of the fragments on Pl. XXIII, 8 showing the chisel-marks on inside. Tomb 9, Level c, exc. No. 1040. (P.A.M. No. 32. 1513.)
- D5. Fragment, deeply corroded. Original height c. 12 cm. Provenance as above but Level e, exc. No. 1022. (P.A.M. No. 32. 1493.)
- D6. Lower part broken away. Original height c. 12 cm., estimated from proportion of complete specimens; greatest diameter 5.5 cm. Chisel-marks radiating from the neck are clearly visible on the inside. Tomb 31, exc. No. 294. (P.A.M. No. 33. 1239.)
- D7. The body is more rounded and the mouth wider than in the other flasks belonging to this group. Chisel-marks visible on inside. Outer surface corroded. Tomb 9, *AAA*, Vol. XIX, Pl. XXX, 14. (P.A.M. No. 32. 1384.)
- D8. Part of rim chipped off, bottom broken. Chisel-marks on inside. From Tell el-'Ajjul, exact provenance unknown. (P.A.M. No. 41. 1133.)

¹ e.g. *Steingefässe*, Pl. III, No. 18316; *Stone Vases*, Pl. XXIX, Nos. 656-60.

² Cf. *Palestine Museum Bulletin*, No. 2, Pl. II, No. S. 944, from a Middle Bronze II tomb at Nabi Rubin; Macalister, *The Excavation of Gezer*, Vol. III, Pl. XLII, No. 9; Cl. F.-A. Schaeffer, *Ugaritica*, Pl. XIV, right.

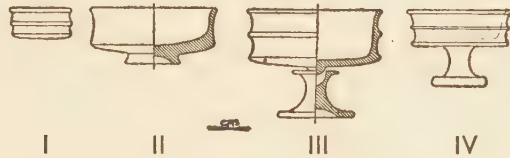
³ A. J. Evans, *The Palace of Minos*, II, pp. 221 ff.

E. *Tazze or Goblets*

The *tazza* or alabaster goblet with upright walls decorated with two or three projecting ribs on the outside is a familiar form in the repertoire of stone vases of the Late Bronze period, both in Egypt and in Palestine. According to Petrie¹ this form is derived from hammered metal-work, but a derivation from wooden ointment boxes seems equally possible; such a wooden box, identical in form with an alabaster *tazza*, was found in an XVIIIth-dynasty tomb at Medinet el-Gurob in the Fayum.²

The *tazze* may be divided into four types:

- I. With flat base, without foot; occurs in Egypt³ and in Palestine.⁴ The examples found in Palestine are made of Egyptian alabaster.
- II. On a low foot which is in reality no more than a ring or disk base. The type is found in



Egypt⁵ and occasionally, but very rarely, in Palestine.⁶ The specimens from Palestine are of Egyptian alabaster.

- III. On a high foot, made out of two separate pieces; the upper part is usually provided with a tenon which fits into a hollow in the pedestal.⁷ Several vases of this type have been found in Palestine.⁸ All those published are in the Palestine Archaeological Museum, together with other unpublished specimens. They all prove to be of Egyptian alabaster.
- IV. On a high foot, made of one piece. This type is very rare in Egypt,⁹ as I was able to satisfy myself when examining the alabaster vases in the Cairo Museum. It is also not recorded in reports of Egyptian excavations. In Palestine, on the other hand, this class is known from scores of specimens found on a number of sites, such as Tell el-Hesi, 'Ain Shems, Jericho, Tell Far'a, Tell el-'Ajjul, Megiddo, and Beth-Shan.¹⁰ (Cf. Pl. XXII, 11-12.)

Most of the published *tazze* of type IV and many others which the excavators did not consider worth publishing are now in the Palestine Archaeological Museum, and all without exception are of local alabaster (gypsum); thus it seems beyond question that this class may be regarded as Palestinian.

¹ *Stone Vases*, p. 12.

² *Bull. Inst. franç. d'archéologie orientale*, Vol. I, Pl. II, 4 b.

³ *Steingefässe*, Pl. VII, No. 18217; *Stone Vases*, Pl. XXXIII, Nos. 836-7.

⁴ Petrie, *Beth Pelet*, I, Pl. XVI; idem, *Ancient Gaza*, II, Pl. XXIII, 37.

⁵ *Steingefässe*, Pl. VII, Nos. 18210, 18215; *Stone Vases*, Pl. XXXIII, Nos. 826-7, 829-30.

⁶ e.g. Petrie, *Ancient Gaza*, II, Pl. XXIII, 29, 31; idem, *Ancient Gaza*, III, Pl. XXVI, 37.

⁷ *Steingefässe*, Pl. VII, No. 18216; *Stone Vases*, Pl. XXXIII, No. 832.

⁸ Macalister, *Gezer*, Vol. III, Pl. LXXXIX, 13, Pl. CVI, 4; Mackenzie, *Excavations at Ain Shems (PEF Annual, 1911)*, Fig. 15, bottom row, third from left; Grant, *Ain Shems*, II, Pl. XLVII; Petrie, *Ancient Gaza*, II, Pl. XXIII, 33.

⁹ The only example of which I am aware is *Steingefässe*, Pl. VII, No. 18218.

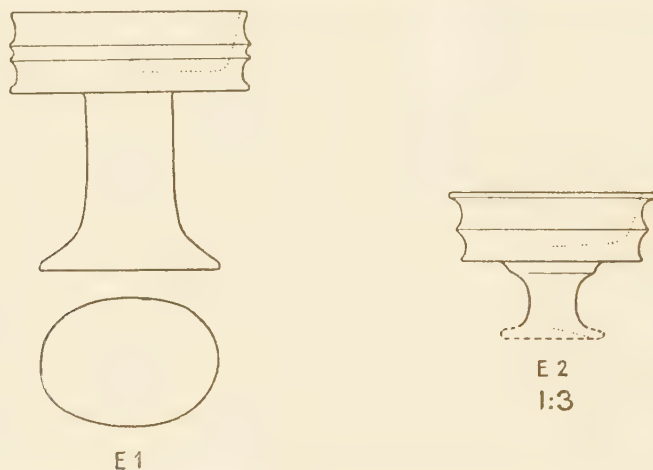
¹⁰ e.g. F. J. Bliss, *A Mound of Many Cities*, p. 118, No. 224; E. Grant, *Beth Shemesh*, p. 137 right; J. Garstang, *AAA*, Vol. XX (1933), Pl. XVI, 8; MacDonald, Starkey, and Harding, *Beth Pelet*, II, Pl. XLVIII, 13, 20, Pl. LIII, 182 and many others; Petrie, *Ancient Gaza*, I, Pl. XXV, 7-8; Guy and Engberg, *Megiddo Tombs*, Pl. 130, 13; Beth-Shan (unpublished).

Sir Flinders Petrie suggests that the *tazze* in general 'may be a Syrian fashion imported'¹ into Egypt, but this seems hardly likely. We have seen that classes I–III are familiar in Egypt, and are known to have been imported thence into Palestine, and that only the fourth class is Palestinian. It is therefore hard to imagine that in Egypt, where the stone industry was on such a high level, the various types of *tazze* should have been made in imitation of the Palestinian class IV which, besides, is typologically the most developed.² On the contrary, we must assume that type IV is based on the Egyptian types I–III, and is mainly a local adaptation of the last, i.e. of the two-piece *tazza* with a pedestal foot.

Another consideration which points in this direction is chronological. The *tazze* start in Egypt at least half a century before they appear in Palestine. The earliest Egyptian examples are of the first half of the fifteenth century B.C. (time of Tuthmosis III),³ while the Palestinian *tazze* belong to the Late Bronze II period only, i.e. to the fourteenth and thirteenth centuries B.C.⁴

Two additional and hitherto unpublished *tazze* of type IV come from Beth-Shan. It is interesting to note that they show some details in design which are not found on *tazze* from other sites. This would tend to show that the workshops of Beth-Shan, which had a long tradition of stone-working of their own, attempted to produce new variants of the usual type.

E1. *Tazza* oval in plan, a peculiarity not found on other specimens of this type which are always circular. Projecting double ridge at centre of body, besides the ridge above and below. Other



tazze have the ridges distributed at equal distances from each other. Level VI, Room 1184. (P.A.M. No. S. 987.)

E2. *Tazza* with foot concave at base; this is usually flat. At the centre of the base is a hole which probably served as a centre for the compass with which the circumference of the vase was outlined. Below Level IX. (P.A.M. No. 32. 27.)

¹ *Stone Vases*, p. 12.

² The *tazze* with little or no foot are according to Petrie, *loc. cit.*, earlier than those with a distinct foot.

³ C. R. William, *JEA*, Vol. V (1918), pp. 167–8.

⁴ Cf. the LB II tombs from Tell Far'a, 'Ajjul, and Megiddo, dated by pottery context. The Egyptian *tazza* from Tell Beit Mirsim published in *AASOR*, Vol. XII, Pl. 42, 2 as coming from the Middle Bronze II level 'D' is evidently intrusive.

F. *Pyxides*

A peculiar type of vase is the pyxis, characterized by a squat body widening toward the bottom, a very low and slightly profiled neck, two lug handles pierced vertically with small holes, and a flat or slightly convex base. The Palestinian alabaster pyxis is clearly derived from the two-handled Mycenaean pottery pyxis which is so common in Palestine in the Late Bronze period, and which continues well into the Iron Age in a debased form.¹ The alabaster pyxis belongs to the same archaeological periods as its pottery prototype; it starts in the Late Bronze II Age (Megiddo, Beth-Shemesh) and continues into the Iron I Age (Beth-Shan, Beth-Shemesh).

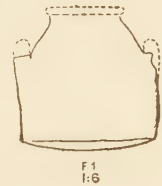
In this connexion it is interesting to recall the theories of Forsdyke² and of Wace³ who both postulate for the three-handled flat Mycenaean pottery pyxis a derivation from alabaster models. Wace calls the pottery pyxis 'alabastron' and considers it to be derived from the flat handleless baggy-shaped alabaster vessel common in Egypt from the XIIth dynasty onwards, whence it was frequently imported into Palestine, and less frequently into Crete. If this theory is correct in regard to Crete, in Palestine the development has clearly gone the other way, i.e. from pottery to alabaster. The proof of this is that the Palestinian alabaster pyxis approaches in shape the *later* stage in the development of the pottery pyxis with its characteristic 'elongation of body . . . and the substitution of the conventional two handles for the original three'.⁴ The practice of copying pottery forms in alabaster is well attested by such undisputable examples as the alabaster 'bilbil' juglets found both in Cyprus⁵ and in Egypt,⁶ as well as by the marked resemblance which some Palestinian alabaster juglets have to the local pottery dipper.

Late Bronze II Period

F1-2. Two large pyxides of dead-white stone, broken and badly corroded inside and out. From Megiddo, Tomb 877 A I. Mentioned in Guy and Engberg, *Megiddo Tombs*, in text facing Pl. 94. (P.A.M. Nos. 34. 1558-9.)

F3. Pyxis oval in plan. Clear chisel-marks visible on the inside. From Megiddo, Tomb 912 B. Guy and Engberg, *Megiddo Tombs*, Pl. 130, 14 and Fig. 184, 11, described as Egyptian alabaster, but now proved by chemical examination to be of local material. (P.A.M. No. 34. 1937.)

F4. Large pyxis; surface partly corroded. Rim partly chipped off. Tool-marks visible on the inside. From tomb 2 at 'Ain Shems. Grant, *Beth Shemesh*, p. 157, No. 809. (P.A.M. No. I. 9.) This tomb 2, called also 'second cemetery', contained in some of its parts Middle Bronze II objects, but the pyxis was found in tunnel 2b which had Late Bronze II pottery and alabaster *tazze* of the same period. Pl. XXIII, 1.

*Iron I Period*

F5. Handles very close to the body and pierced obliquely by small holes. Tool-marks visible near handles and inside of body. Base left unsmoothed. From 'Ain Shems, Tomb I. The pyxis is described by Mackenzie in *PEF Annual*, II, p. 56 as 'Egyptian'. (P.A.M. No. S. 329.)

¹ J. G. Duncan, *Corpus of Palestinian Pottery*, type 55.

² E. J. Forsdyke, *Catalogue of the Greek and Etruscan Vases in the British Museum*, Vol. I, Part I, p. 141.

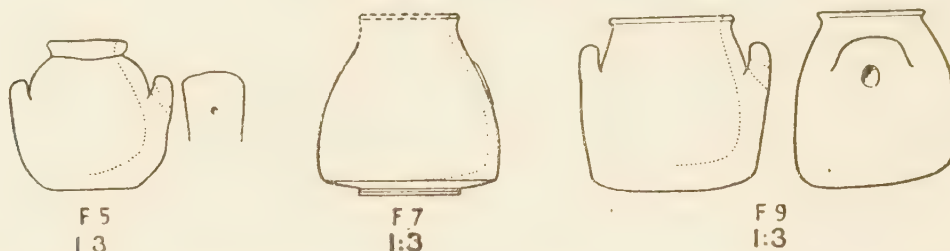
³ A. J. B. Wace, 'Chamber Tombs at Mycenae' (*Archaeologia*, Vol. LXXXII), p. 150.

⁴ E. J. Forsdyke, *op. cit.*, p. 143.

⁵ Myres, *Handbook of the Cesnola Collection*, p. 276, No. 1628, ill. on p. 277.

⁶ Firth and Gunn, *Teti Pyramid Cemeteries*, Vol. II, Pl. 44, A7.

- F6. Similar in shape to F1, but broken off at shoulder. From Beth-Shan, Level VI,¹ Room 1583, exc. No. 31-11-238. (Not in P.A.M.)
- F7. Pyxis with disk base, an unusual feature; handles chipped off. From Beth-Shan, Level VI, Area 1586, exc. No. 31-11-260. (Not in P.A.M.)



- F8. Upper part of pyxis with slightly profiled neck. From Beth-Shan, Level VI, Room 1590, exc. No. 31-11-375. (Not in P.A.M.)
- F9. Two lug handles pierced obliquely. Chisel-marks visible inside. From Beth-Shan, Level V, Room 1544. (P.A.M. No. 32. 14.)
- F10. From Beth-Shan, Level V, Room 1528, exc. No. 30-11-121. (Not in P.A.M.)
- F11. Pyxis with rather large horizontal loop handles, one broken off. The flat rim does not occur on the other pyxides but is typical for stone vessels in general and would tend to show that gradually the stone industry was freeing itself from the influence of pottery forms. It is significant that this pyxis was found in a higher level than those listed above and can thus be placed chronologically at the end of the series. The material is a dark grey bituminous



- alabaster such as is found in the neighbourhood of Milhamiya. From Beth-Shan, above Level V, north of Room 1523. (P.A.M. No. I. 9670.)
- F12. Body oval in plan. From Beth-Shan, 'upper strata', exact provenance unknown. (P.A.M. No. S. 988.)

The following two vases do not really belong to the pyxis family but can be considered as related to it on account of the shape of the obliquely pierced handles.

- F13. Egg-shaped body, oval in plan. No neck. From Beth-Shan, Level V, north-east of Room 1526. (P.A.M. No. I. 9683.)
- F14. Egg-shaped body, oval in plan. Short neck. The handles are pierced with oblique holes and decorated with vertical grooves. Incised decoration on shoulder consisting of zigzag lines running horizontally between parallel straight lines. The decoration is obviously copied from

¹ Level VI, at first assigned to the reign of Seti I (1313-1292 B.C.), has now to be dated to the twelfth century B.C. Cf. FitzGerald, in *PEF QSt.*, 1932, p. 142; and Albright, *The Excavation of Tell Beit Mirsim*, Vol. II (*AASOR*, Vol. XVII), p. 77.

PALESTINIAN ALABASTER VASES

pottery, where the motif of painted wavy lines between parallel ones is characteristic of the Late Bronze period and is carried over into the Iron I Age.¹ The material is a dark grey bituminous alabaster, hardly recognizable as such. Described in the excavator's register as basalt. From Beth-Shan, Summit, exc. No. 3592. (P.A.M. No. S. 930.)

F15. This vase (not in P.A.M.), found together with F14 and similarly described in the excavator's register as basalt, is certainly made of dark bituminous alabaster like the latter which



has been tested by analysis. Basalt was used in Palestine only for mortars, bowls, or other open vessels with thick walls, and it would have been above the capacity of the local craftsman to produce a small vessel with thin walls in such a hard stone as basalt. The form is a close imitation of such pottery pyxides as, e.g., Albright, *Tell Beit Mirsim*, I, Pl. 51, Nos. 4-5. From Beth-Shan, provenance as above, exc. No. 3590.

G. Alabastra

The name 'alabastron' is usually applied to the elongated, drop-shaped alabaster juglets with two small knob handles² of a form which was also imitated in pottery,³ glass, faience, and other materials. They were in common use from the sixth century B.C. down to the Hellenistic period.⁴ Several specimens have been found in Palestine, all made of Egyptian alabaster and identical in shape with those typical of their country of origin⁵ (Pl. XXIII, 4). But the revival of the import of Egyptian alabaster vases, which had died down during the Late Israelite period, seems also to have brought about a partial revival of the old native Palestinian stone industry.

The four alabastra made of local stone which are listed below are each a close imitation of the Egyptian type. They show variations of detail, however, which clearly betray the Palestinian craftsman who was far behind the Egyptian stone-worker both in technical skill and in his feeling for line.

G1. Alabastron with two handles in the form of irregular knobs. Rim chipped off, ribbed neck, convex body, conical rounded base. Contrast this with the gently curving neck, drop-shaped

¹ e.g. Macalister, *The Excavation of Gezer*, Vol. III, Pl. CLXVI, 6 (Philistine sherd), Pl. CLXXIII, 4 and 6 (IV Semitic pottery); Albright, *The Excavation of Tell Beit Mirsim*, I, Pl. 30, 6 and p. 63; Grant and Wright, *Ain Shems Excavations*, IV, Pl. XL, 22b.

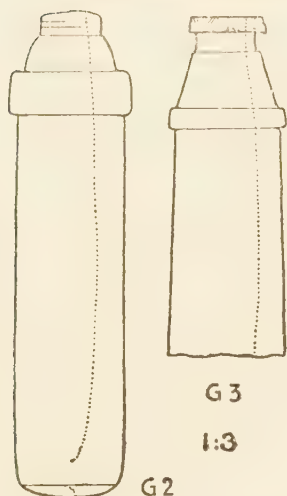
² *Stone Vases*, Pl. XXXVII, Nos. 948-71.

³ G. Richter, *Shapes and Names of Athenian Vases*, p. 17.

⁴ A most exhaustive study of the subject was recently published by von Bissing in *Studi Etruschi*, Vol. XIII (1939), pp. 131-78.

⁵ R. A. S. Macalister, *The Excavation of Gezer*, Vol. I, Fig. 152, 2, Fig. 157, 22; Vol. III, Pl. LV, 1, 2, Pl. CCXIII, 10; C. N. Johns in *QDAP*, Vol. II, p. 62, Fig. 19, Pl. XXII, No. 548; Reisner, Fisher, and Lyon, *Harvard Excavations at Samaria*, Vol. I, p. 333, Fig. 204, Nos. 1a and 3a.

body, and strongly rounded base of the Egyptian alabastron. Provenance uncertain, probably from one of the tells of the Shephelah. (P.A.M. No. S. 108.) Pl. XXIII, 3.



G2. Alabastron with straight sides and shallow plastic band below shoulder, a feature never found in imported vessels. The knob handles are formed by a thickening of the band. Slightly convex base, in the centre of which is a hole, not bored through. Vertical chisel-marks visible on inside. Provenance unknown. (P.A.M. No. S. 2623.) Pl. XXIII, 2.

G3. Upper part of alabastron with conical shoulder, not found on Egyptian alabaster. Plastic band below neck; handles as above. Vertical chisel-marks visible on inside. Provenance unknown. (P.A.M. No. S. 2624.)

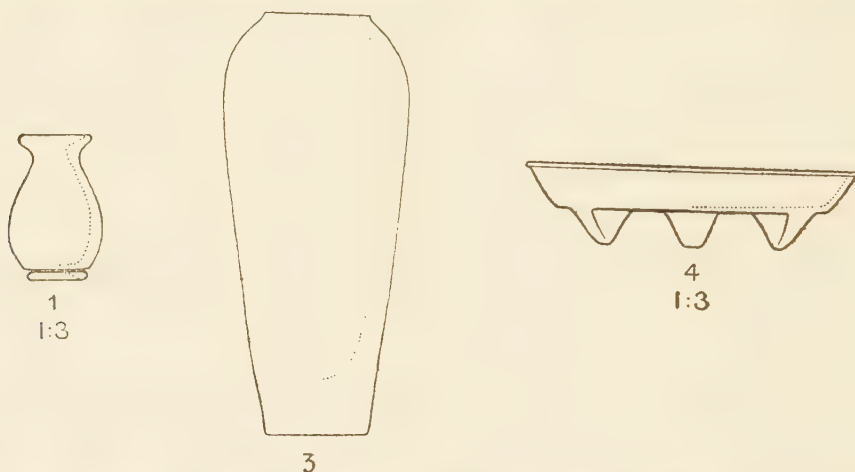
G4. Alabastron with slightly convex sides, vertical neck, and flat base. The knob handles have a square profile, whereas the handles of the Egyptian alabaster are usually rounded. The above details make it certain that the vessel is of Palestinian manufacture, though no chemical test could be applied. From Jericho, 'spät-jüdische Schicht'.

Sellin-Watzinger, *Ausgrabungen in Jericho*, p. 153, Fig. 186. (Not in P.A.M.)

Miscellaneous

The following five vases cannot be assigned to any of the foregoing types.

1. Pear-shaped body with flaring neck. The concave disk base is unusual on alabaster vases, the natural base of stone vessels being either flat or rounded; we find also trumpet bases, especially on high vessels like goblets or *tazze*, and rarely ring bases, but such a concave disk base as this is evidently copied from the concave disk base which is one of the character-



istics of Palestinian Middle Bronze II pottery. From Beth-Shan, burial of Middle Bronze II date, in Room 1822. (P.A.M. No. 34. 1012.)

2. Bottle, rectangular in horizontal section, neck broken off. From Jericho, Tomb 9 of Middle Bronze II date. Garstang, in *AAA*, Vol. XIX, Pl. XXX, 12. (P.A.M. No. 32. 1498.)
3. Similar in general outline to the 'small jars' (Class C), but without neck. From Beth-Shan, North Cem. II, Tomb 42 of the Middle to Late Bronze Age, exc. No. 1516. (Not in P.A.M.)
4. Flat tripod bowl, a miniature imitation of the ubiquitous basalt mortars. From Beth-Shan, North Cemetery, Tomb 257 of Roman date. (P.A.M. No. 32. 105.)

It is noteworthy that none of the alabaster pilgrim bottles in the Palestine Archaeological Museum proves on examination to have been made locally, although the form is certainly Aegean and Syro-Palestinian and although pottery pilgrim flasks found in Egypt are either imported¹ or imitated from imported specimens. The explanation may lie in the difficulty of hollowing out a stone vase with a flat, wide body and narrow neck,² a task which an inexperienced craftsman must have hesitated to undertake; even the Egyptian stone-worker sometimes tried to solve the difficulty by boring out the inside to a width which hardly exceeded that of the neck and by enlarging the latter to a diameter unusual in the pottery prototype.³

Conclusion

It is clear that the Palestinian alabaster industry came to life under the influence of Egyptian imported wares. The highly developed and refined stone industry of Egypt similarly gave rise to native stone industries elsewhere. In Crete, where the import of Egyptian stone vases seems to have begun in the Predynastic period, we find stone vases made of local material in imitation of Egyptian shapes from the Early Minoan period onwards.⁴ There are also indications of a local alabaster industry in Cyprus comprising imitations of Egyptian imports⁵ as well as original types.⁶ The same seems to be true for the island of Mochlos, where vases of local alabaster appear in the Early Minoan II period.⁷ Although no imported stone vases were found on the island, it is assumed by the excavator, on the basis of similarity of form, that the native alabaster industry was influenced by Egyptian models.

In Palestine the influence of Egypt can be traced step by step. The local industry sprang up in the Middle Bronze II Age, when the import trade with Egypt was at its height. During this period the Palestinian forms were mainly imitations of Egyptian types and no original forms are found apart from juglets. During the Late Bronze period imitation continued, but the local industry produced a variety of its own, the *tazza* of type IV,⁸ and also created an entirely new type, the pyxis, which continued into the opening phase of the Iron Age.

The chief centre of manufacture during the Middle Bronze II period was undoubtedly Beth-Shan, as is proved by the finding of unfinished vases within such a small area that the existence of a workshop must be presumed. The reason why Beth-Shan became a place of manufacture is obviously to be found in the fact that it lies in the neighbourhood of the gypsum deposits of Milhamiya.

¹ *Stone Vases*, p. 14.

² *Stone Vases*, Pl. XXXVI, Nos. 915-16; Petrie, *Gerar*, Pl. XLV, 4 (= P.A.M. No. S. 2655); Grant, *Beth Shemesh*, figure on p. 137 (= P.A.M. No. I, 8); Tufnell, Inge, and Harding, *Lachish II, The Fosse Temple*, Pl. XXV, 1 (= P.A.M. No. 35. 3076).

³ *Stone Vases*, Pl. XXXVI, No. 918 and an unpublished pilgrim bottle from the North Cemetery at Beth-Shan. (P.A.M. No. S. 854.)

⁴ Cf., e.g., A. J. Evans, *The Palace of Minos*, Vol. I, pp. 64, 85-93.

⁵ J. L. Myres, *Handbook of the Cesnola Collection*, p. 275.

⁶ A collection of such mostly non-Egyptian forms is shown in Cesnola, *Salamina*, London, 1882, Pl. XI.

⁷ R. B. Seager, *Explorations in the Island of Mochlos*, pp. 101-4.

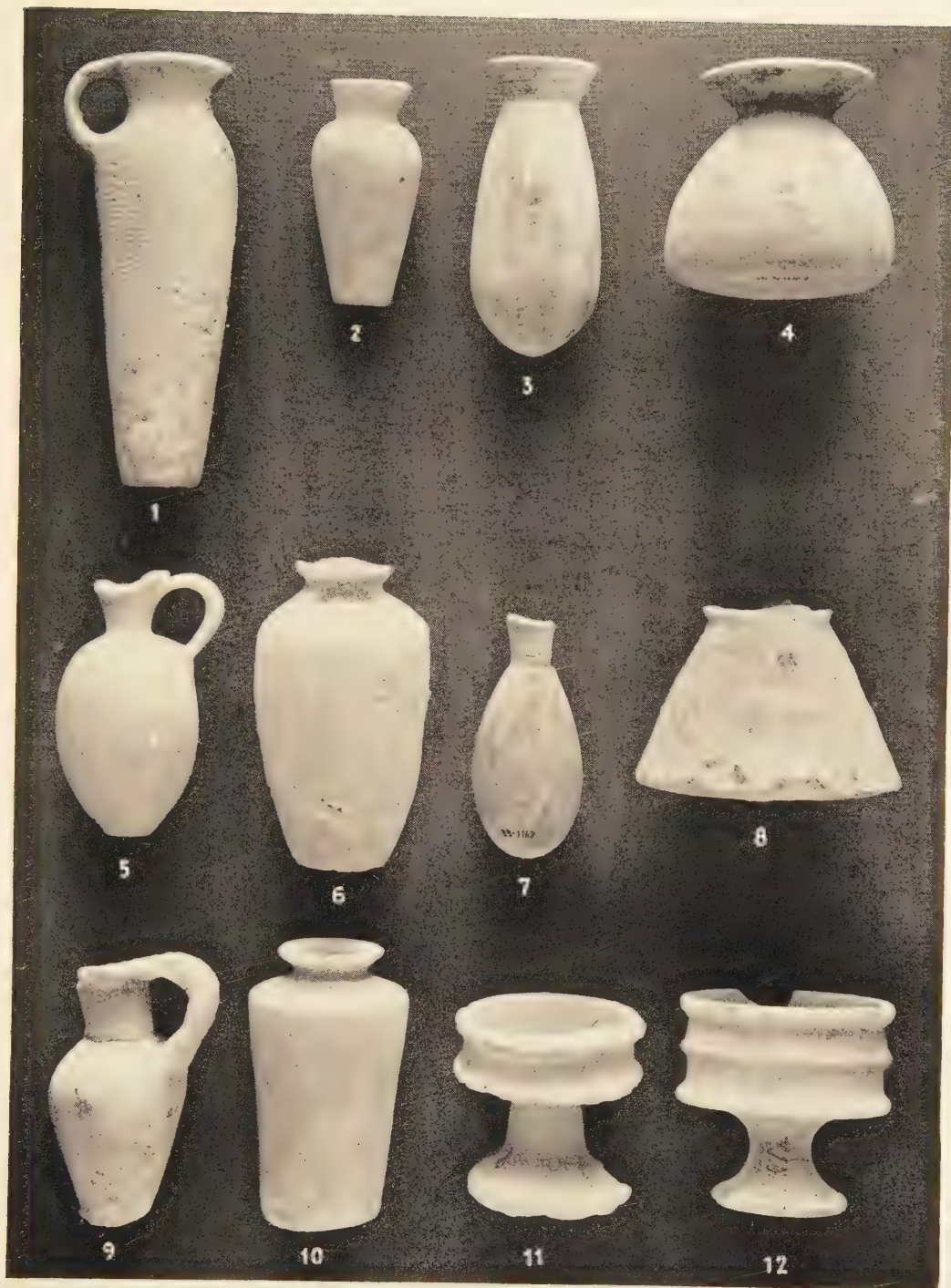
⁸ It remains to be seen whether the *tazze* found in Cyprus were imported from Syria or Palestine.

I. BEN-DOR

As a second place of manufacture during the same period we may consider Jericho. Although no tangible proofs of local manufacture can be adduced, it may be inferred from the number of gypsum vases found there.

During the Late Bronze period gypsum vases, mainly *tazze*, are distributed throughout the whole country, but their place or places of manufacture escape us at present.

I. BEN-DOR.



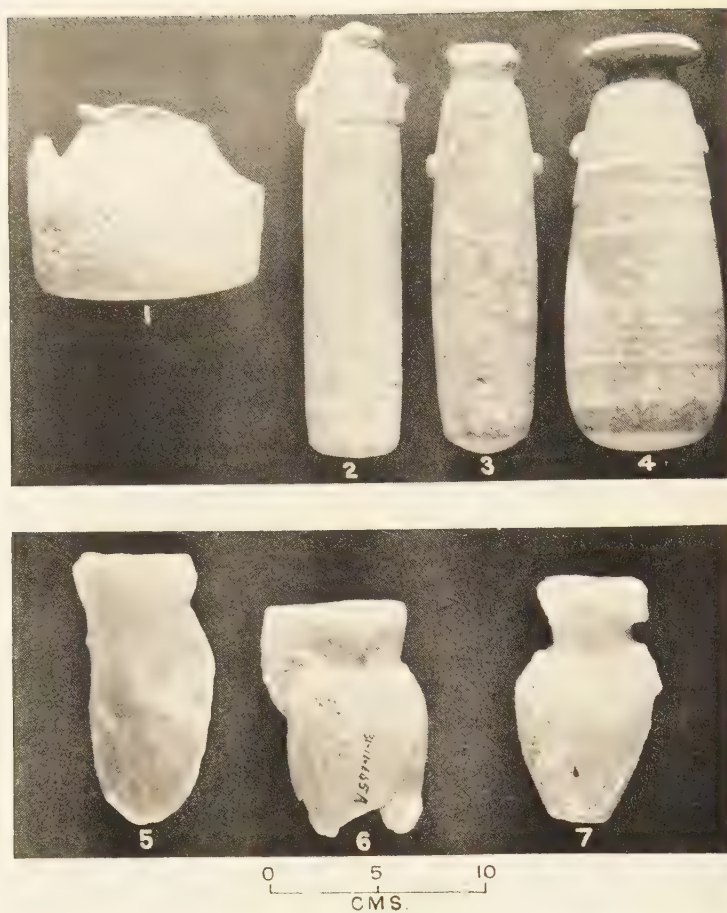
PALESTINIAN ALABASTER VASES

1-4. Vases imported from Egypt.

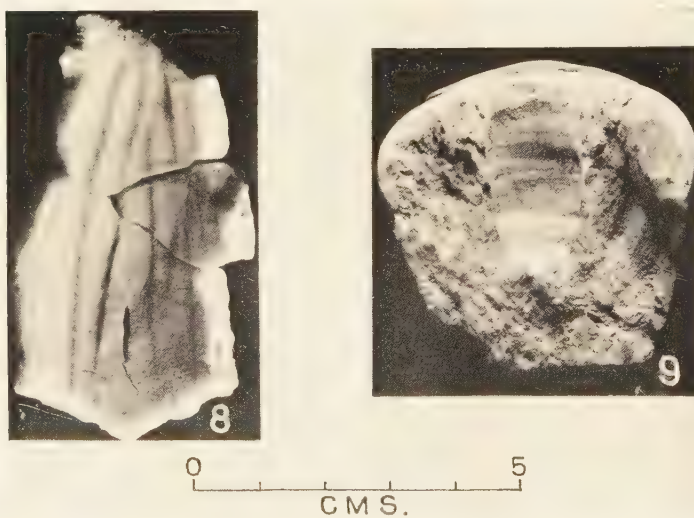
5-12. Locally made vases.

(5 = A11, 6 = C5, 7 = D2, 8 = B1, 9 = A10, 10 = C9,

11-12 cf. p. 105, type IV.)



1-3. Locally made vases. 4. Imported from Egypt.
(1 = F4; 2 = G2; 3 = G1.)
Unfinished juglets from Beth-Shan (5 = A1; 6 = A2; 7 = A3.)



8. Chisel marks on the inside of a Palestinian vase.
9. Drill marks on an Egyptian vase.

PALESTINIAN ALABASTER VASES

EXCAVATIONS IN PALESTINE AND TRANS-JORDAN, 1940-1¹

Abu Ghōsh (Qaryat el 'Inab)

(Benedictine Fathers, directed by the Rev. Father Alexandre Lannes, O.S.B.)

TO the east of the well-known Crusader church at Abu Ghōsh and just to the south of the mosque are the remains of the monastery of the Knights Hospitallers, built A.D. 1141 along with the church. The southern part of the ruin had been abandoned for many centuries, and was dilapidated and dangerous until the present clearance and restoration was taken in hand in July 1941.

In the course of the work a basement vault was excavated. This once formed the end of the right wing of the building, the long side of the vault lying across the wing.

The vault is 14 m. long from north to south and has an average width of 7.50 m. About 400 cu. m. of debris were removed from inside it, and its walls proved to be well preserved.

The vault had two entrances. A fine doorway in the north wall seems to have formed the main entrance. This was blocked by the Arabs some time after 1187 when they constructed the mosque now adjacent, the mihrab of which stands in the old archway. The other doorway, which is of smaller dimensions, was probably used as a service door; it opens in the west wall quite close to the blocked north doorway, and it led to a corridor connecting the basement with the monastery.

In the east wall there is an open arch of 4 m. span, to all appearances another doorway. Below it were found the remains of the Hospitallers' oven, clearly recognizable from its shape and from the fire-resisting *nari* stones of which it is constructed.

The west wall of the hall once belonged to an earlier structure and was originally 1 m. thick; but in order to abut the present vault, which is of 7½ m. span, this wall was thickened to 2.86 m., while the new east wall was built to a width of 2.18 m.

In the north wall, near the oven, there was found a circular basin, to which water was brought from the spring in the corner of the court-yard of the present mosque.

Thus, in its final form at least, the vault served as the bakery of the monastery.

The Hospitallers' oven was familiar to the members of the Abu Ghōsh family who first took possession of the site towards the middle of the eighteenth century, and was in fact known to them as 'the oven'. Down to the time of Ibrahim Pasha (1834), they used it as a prison for the Franciscans and other pilgrims whom they held to ransom.

'Ain Kārim, Church of St. John the Baptist

(Custodia di Terra Santa, directed by the Rev. Father Sylvester J. Saller, O.F.M.)

FROM June to September 1941 clearances were made west of the church and monastery of St. John the Baptist in the village of 'Ain Kārim, the results of which throw light on the history of the site from Herodian times down to our own days.

A rock-cut chamber is the oldest monument found; it is reached by a flight of five steps in a rock-sunk shaft; the door has a round arch; inside the room there are two broad steps leading to a trough-like depression, in which pottery of Herodian date was found.

¹ Continued from Vol. X, pp. 195-200.



FIG. 1. Sites of excavations shown thus ●

A system of basins, channels, and vats associated with mosaic pavements and pottery of the early Byzantine period represent wine and oil presses.

Two chapels belong to the Byzantine period. The one was built over the abandoned presses; its eastern and northern walls are represented by cuttings in the native rock; its other walls consist of rubble. Plaster covered all the walls; that on the eastern wall of the chancel has large incisions; that on the northern wall of the nave is painted red; the rest is white and plain. All the floors were paved with mosaics. Those of the room north of the apse have a cable border and a field decorated with quatrefoils; the chancel has a ribbon border and its field is divided into squares by leaves and floral crosses, each square being filled with a foliate motif; the nave was treated as one field having a rectilinear border and is subdivided into squares by diagonal indented bands; the room west of the nave also has a rectilinear border, and its field is decorated with circles containing six-foils. In the first case 6 colours were used, in the second 16, in the third and fourth 3.

Regarding the other chapel beneath the porch, see B. Meistermann, *La Patrie de Saint Jean-Baptiste*, Paris, 1904, pp. 178 ff., 190-208. Its limits on the south, west, and north were determined in 1941; it is entirely paved with mosaics and has a door in the eastern end of its northern wall. From the door a passage extends northwards; to the east and west of the same there are loci which were paved with multi-coloured pavements of which little remains. West of this chapel there are two rooms which had plain mosaic pavements. North and north-west of the chapel there are other rock-cuttings and mosaic pavements whose full extent and character is not yet known; see Meistermann, *l.c.*, pp. 192-6.

Both chapels were covered with buildings and debris of various periods. On the east they are partially covered by the walls of the church and monastery restored in the seventeenth century; farther west a Crusading wall covers both the apse and a lateral chamber of the southern chapel; the eastern end of the nave of the southern chapel is crossed by a wall which antedates the end of the seventeenth century; immediately west and south of that wall three strata could be distinguished: the lowest stratum contained Byzantine and medieval Arabic sherds; the central layer consisted of ashes on the north and mortar on the south; the topmost level contained objects of recent date; the latest buildings, still occupied at the beginning of this century, were on the western part of this area.

In the debris there were the fragments of a Byzantine capital, a complete marble base, pieces of stone and marble shafts, a piece of a marble screen and of a marble altar, mouldings, millstones, pestles, stone troughs for watering chickens, tiles from roofs and walls, potsherds, glass, and mother-of-pearl, and also a number of clay pipes.

Prehistoric caves

(American School of Oriental Research; directed by M. Stekelis)

THE *Magharat el Watwat* ('Cave of the Bat') is situated on the western bank of the Wadi Adasiye, about 2 kilometres north of the village of Beit Nabala (Ramle Sub-District),¹ and lies about 30 m. above the bed of the wadi.

¹ This cave was discovered by the geologist, Mr. P. Solomonica.

The entrance roughly resembles an arch, and faces west. Close to the entrance there is an irregular chamber, then a corridor leading into a second chamber which has a natural apse on the left side. Penetrating still farther, we find a third chamber roughly ellipsoidal, its roof forming a natural dome approximately 12 m. above the floor of the cave. Part of the roof has collapsed.

Outside the cave there is a steep talus, with a radius of about 6 m. It contains exposed hard breccia in which are embedded worked flint implements and animal bones.

A sounding 2 m. by 2 m. 50 was made near the entrance of the cave. Beneath 40 cm. of earth a layer of breccia was found which seemed to be a continuation of the exposed breccia mentioned above. It was so hard that the objects had to be chiselled out of it. They included cores, points, and blades of Levallois-Mousterian type, as well as many fragments of animal bones.

The *Magharat Wadi Fellah* is situated on the northern bank of the wadi, about 20 m. above the wadi-bed. The cave faces south and consists of one chamber of irregular shape.

Outside the cave there is a fan-shaped talus with a radius of about 30 m.

The cave itself has a layer of breccia in which animal bones and flint implements are embedded.

A sounding made in the talus shows the following stratification:

1. 0 m.—0 m. 35. Black earth, mixed with angular pieces of limestone. Modern debris and flint implements of Mesolithic type; fragments of animal bones.
2. 0 m. 35—0 m. 90. Soft red earth containing a Natufian deposit.
3. 0 m. 90—1 m. 20. Hardened reddish earth with Upper Palaeolithic flint implements.
4. 1 m. 20—2 m. Hard red earth with Middle Aurignacian flint implements. The rock was not reached.

Near the wadi-bed Middle Palaeolithic flint implements were collected; these may have been washed out from the original deposit in the cave.

It is estimated that the total depth of the prehistoric deposit in *Magharat Wadi Fellah* is not less than 20 m.

The *Magharat Abu Usba'* lies on the opposite bank of the Wadi Fellah, 110 m. above the wadi-bed; its mouth faces north, and is elliptical, reaching a height of 6 m. A short corridor leads into a first chamber, 15 m. long and 9 m. 50 wide, and this chamber gives access to a second, 8 m. 50 long and 7 m. wide. In the northern wall of the second chamber there is a natural apse. There follows a third and innermost chamber, measuring 20 m. by 13 m. This last has a lofty dome-like roof culminating in a chimney 20 m. high, leading to the outside, but blocked with stones. At the southern end of this chamber there is a passage, probably another chimney.

Outside the cave there is a talus with a radius of 18 m., enclosed by a modern dry stone wall.

A trial pit made just inside the entrance of the first chamber showed the following stratification:

- A. 0 m.—0 m. 70. Recent and modern remains.
- B-1. 0 m. 70—0 m. 95. Soft red earth with potsherds.
- B-2. 0 m. 95—1 m. 25. Soft red earth with potsherds and some flint implements which cannot be classified.

EXCAVATIONS IN PALESTINE AND TRANS-JORDAN, 1940-1

- C. 1 m. 25-1 m. 95. Hardened red earth with Natufian implements lying in a pocket.
- D. 1 m. 95-2 m. 45. Grey earth. Sterile.
- E. 2 m. 45-2 m. 70. Decomposed rock.
- F. Rock. (Probably.)

As the sounding had shown the presence of prehistoric remains, excavations were undertaken. The important problem was the relation between the flint implements and the pottery remains, which the sounding had not made clear.

The chamber was divided into eight areas, two of which were investigated. Both these areas were excavated down to the probable rock surface, the work being done with small picks, in layers of 5 cm. at a time. Both transversal and longitudinal sections were obtained, and in every case the sequence and correlation of flint implements with the pottery was found to be as follows:

- A. 0 m.-0 m. 90. Black earth with modern remains.
- B-1. 0 m. 90-1 m. 15. Red earth with potsherds and flint implements of the Upper Natufian type.
- B-2. 1 m. 15-1 m. 65. Soft red earth, with potsherds and flints as above.
- C. 1 m. 65-2 m. 35. Stalactite crust. Hard red breccia with animal bones and flint implements of Levallois-Mousterian type.
- D. Rock. (Probably.)

The pottery fragments from layers B-1 and B-2 are all hand-made. The paste is local clay, which in its natural state includes a considerable quantity of grits. The fragments were fired at different temperatures and are of various degrees of hardness, some being very brittle and porous. They represent flat bases and rims and handles, including loop handles and a primitive form of ledge-handle. A few fragments bear incised ornament and a very few are painted.

The flint implements from layers B-1 and B-2 are abundant and have affinities with Upper Natufian types, i.e. crescents, microburins, Natufian sickle-blades, ordinary graters, core- and end-scrapers, and a very few microlithic implements, along with fragments of bone tools such as awls and needles. In addition there are new types such as arrow-heads, denticulated saws, and new forms of sickle-blades.

In layer C the bone fragments were fossilized, and the flint implements comprised cores, Mousterian points and scrapers, and Levallois blades.

The sounding made in the third chamber measured 3 m. by 2 m. 50. The stratification was as follows:

- 1. 0 m.-1 m. 50. Black soft earth full of stones. Sterile.
- 2. 1 m. 50-2 m. Hardened black earth with limestone fragments. Sterile.
- 3. 2 m.-3 m. 40. Hardened dark-brown earth. Levallois-Mousterian.
- 4. 3 m. 40-3 m. 60. Soft dark-brown earth. Sterile.
- 5. 3 m. 60-5 m. Hardened dark-brown earth with decomposed fragments of limestone. Sterile.
- 6. 5 m.-6 m. Decomposed rock.
- 7. 6 m. Rock.

The trench made on the terrace measured 5 m. by 5 m. 25, and reached rock at a depth of 1 m. 20. It produced dark-brown earth containing large quantities of angular lime-

stone fragments and many rolled flint nodules from the wadi, evidently brought into the cave by man. The archaeological deposit was mixed, containing fragments of Roman-Byzantine pottery, flint implements and potsherds of the same kind as those found in the cave (in the first chamber, layer B).

'*Iraq el Barud*. About 4 kilometres north of Wadi Fellah is the Wadi 'Ein Abu Hadid, and on its southern bank, about 30 m. above the bed of the wadi, is the cave known as 'Iraq el Barud. This cave consists of two chambers with lofty dome-shaped roofs. The walls and the roofs are covered with stalactites. In the centre of the first chamber a part of the floor has been destroyed. In the debris there were Tahunian implements mixed with Roman sherds. A sounding made beneath a collapsed block with the object of ascertaining that the floor had not been destroyed at that point gave the following section:

A. 0 m.-0 m. 30. Soft red earth with Natufian flint implements.

B. 0 m. 30-0 m. 60. Soft red earth with small angular fragments of limestone. Upper Palaeolithic.

C. 0 m. 60-1 m. 10. Red hardened earth with Upper Palaeolithic (Aurignacian).

Fauna: *Dama mesopotamica*?; *Hyaena* sp.; *Gazella* sp.

The rest of the cave has not been explored. In front of the cave is a big talus covered with fallen blocks; it seems to have a considerable Palaeolithic deposit.

Tell esh Shūni, near Tel Aviv

(Department of Antiquities in collaboration with Museum of Jewish Antiquities,
Hebrew University, Jerusalem)¹

IN order to conserve what remains of the Iron Age fort, the walls have been pointed and topped, and the ramp and other details have been reconstituted. But the north wall has been left in its original state with remains of white plaster rendering on the face and traces of burning on the top.

In the course of clearance in front of the east side of the ruin a detached wall of rubble has come to light. It begins at the north side of the ramp and runs parallel with the front of the building, some 5 m. distant. At its south end, where it emerges on to the beach, sea erosion has exposed the last few metres of an extra rampart, which has a sloping front of firm rubble founded at beach level. Possibly this was built as a sea wall and was continued around the seaward sides of the building, now entirely destroyed.

Between this outer rampart and the front of the ruin a clearance had to be made for drainage purposes. Here the original ground-level was found on the barren sand at a mean depth of 60 cm., or about a metre above beach level. It was marked by a floor of rock spoil strewn with Iron II sherds. A second occupation level marked by similar sherds was found 20 cm. above. The rest of the accumulation excavated here and elsewhere contained debris of the Persian and Roman-Byzantine periods, such as occurred on the top of the mound above the ruins of the fort.

Hence the fort is to be dated to the second or middle period of the Iron Age and can hardly have been erected before the ninth century B.C.

¹ Cf. *QDAP*, Vol. VIII, p. 167.

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